ORDER NO. RD83025316C2

Service Manual

Radio

FM-LW-MW-SW PLL SYNTHESIZED RECEIVER RF-799LBS

■ SPECIFICATIONS

SW

Frequency Range:	2.3~2.935MHz (120m) 2.940~3.575MHz (90m) 3.58~4.215MHz (75m) 4.54~5.175MHz (60m) 5.82~6.455MHz (49m) 7.1~7.735MHz (41m) 9.5~10.135MHz (31m) 11.58~12.215MHz (25m) 15.1~15.735MHz (19m) 17.5~18.135MHz (16m) 21.34~21.975MHz (13m) 25.5~26.100MHz (11m)
IF Frequency:	450kHz
Sensitivity (400Hz, 30% Modulation 50mW):	S/N 10dB: 4.5μV/m (at 12MHz) S/N 20dB: 14μV/m (at 12MHz)
Antenna:	Telescopic, Ext. Antenna (High Impedance)

MW

Frequency Range:	522~1611kHz (9kHz step) 530~1610kHz (10kHz step)
IF Frequency:	450kHz
Sensitivity:	Max.: 50μV/m S/N 20dB: 400μV/m
Antenna:	Ferrite Core

LW

Frequency Range:	153~281kHz
IF Frequency:	450kHz
Sensitivity:	Max.: 100μV/m S/N 20dB: 500μV/m
Antenna:	Ferrite Core

FM

Frequency Range:	87.5~108MHz
IF Frequency:	10.7MHz
Sensitivity:	3μV/75Ω (−3dB, Limit Sens) 6.0μV/75Ω (S/N 30dB)
Antenna:	Telescopic, Ext. Antenna (75Ω)

General

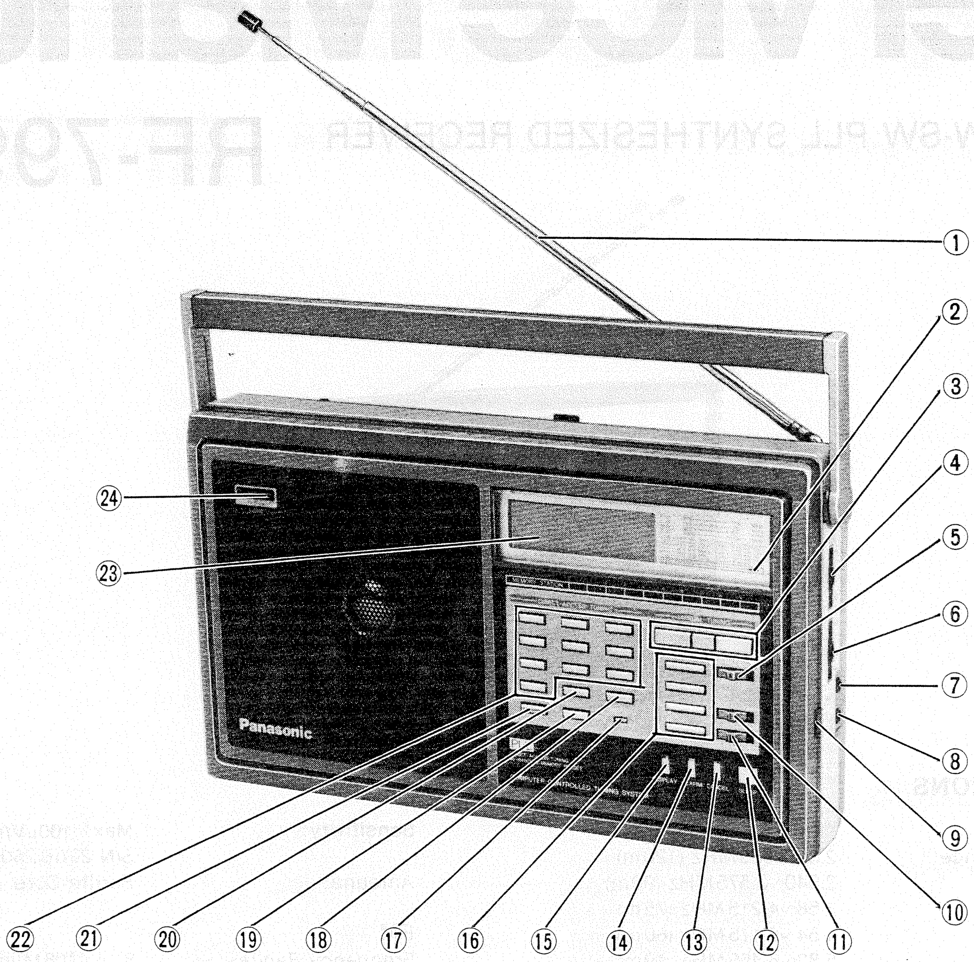
Type:	Single Superheterodyne with PLL Synthesizer
Speaker:	9cm (3-1/2″) PM Dynamic speaker (3Ω)
Power Source:	AC 110~127/220~240V, 50/60Hz DC 6V (4×"C" size) Memory Back-up 3V (2×"AA" size)
Power Consumption:	7W
Jacks:	Earphone/ext. speaker (3~8Ω) Rec-out (10kΩ) AC-in
Ext. Antenna:	75Ω for FM, High Impedance for SW
Dimensions (W×H×D):	$11^{3}/_{8}'' \times 6^{9}/_{16}'' \times 3^{5}/_{8}''$ (290×166×93mm)
Weight (Without Batt.):	3 lb, 7 oz. (1.56kg)

Specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

LOCATION OF CONTROL AND COMPONENTS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Panasonic

Fig. 1

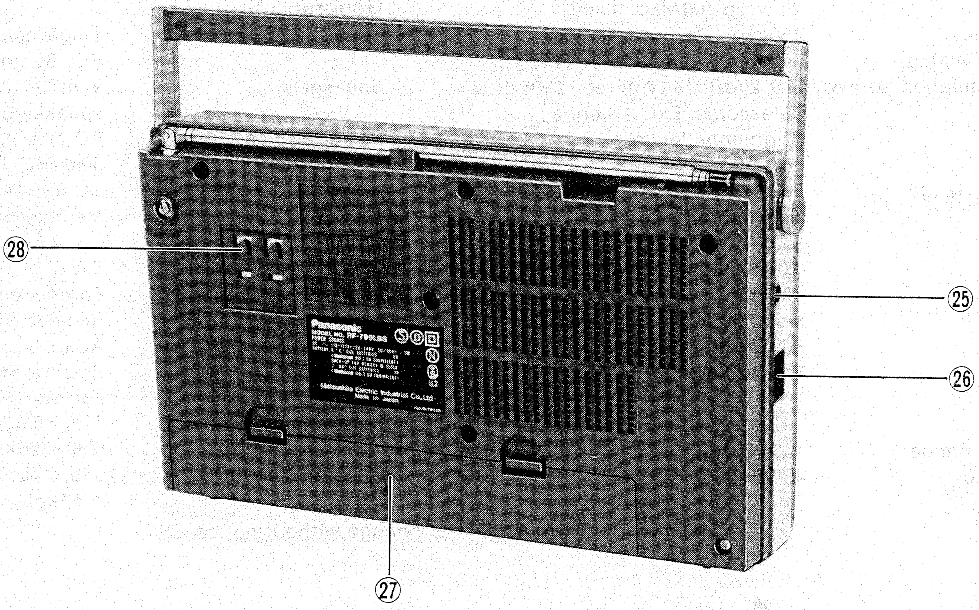
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Fig. 2

① **Telescopic Antenna**
Effective on FM and SW. For the best reception, pull out the Telescopic Antenna and position it in the direction which provides the optimum reception.

② **LED Tuning Indicator (LED TUNING)**

③ **Manual Tuning Keys (MANUAL TUNING)**
Use for manual tuning.

④ **Volume Control (VOLUME)**
Use to adjust the volume level.

⑤ **Radio Switch (RADIO)**
ON: Turn the radio on.
OFF/AUTO: Turn the radio off and cause the radio or chirp alarm to sound at the set alarm time.

⑥ **Tone Control (TONE)**
Use to adjust the sound quality.

⑦ **Recording Output Jack (REC OUT)**
When used with the appropriate connection cord, broadcasts can be recorded onto a tape recorder.

⑧ **External Speaker/Earphone Jack**
(🔈 🎧 IMP 3–8Ω)
Use to connect the included earphone or optional extra external speaker (impedance 3–8 ohms). When the plug is inserted, the built-in speaker is automatically disconnected. Adjust the volume to lower level when using an earphone.

⑨ **MW Frequency Step Selector (MW STEP)**
Be sure to set this switch to the proper position; 9 kHz or 10 kHz.

⑩ **Lock Switch (LOCK)**
When this switch is in the locked position (when slid to the right), the frequency/clock display indication is locked to the frequency or time, whichever was displayed when the lock mode was established. The indication will not change even if any of the keys or switches are operated in this mode. The alarm function, however, will function at the set time.

⑪ **Radio/Chirp Alarm Selector (ALARM)**
RADIO: The radio will sound at the set alarm time.
CHIRP: The chirp (and radio) will sound at the set alarm time.

⑫ **Sleep Set Key (SLEEP)**
Depress when setting the sleep timer. The " SLEEP " indication then appears on the Frequency/Clock Display. When pressed for the first time, the frequency of the broadcast station being received is displayed and when pressed the next time, the sleep time is set to 60 minutes. Each time the key is again pressed, the sleep time is reduced by 5 minutes. The sleep time display returns to "60" after "00". When the Sleep Set Key is depressed, the rest seconds of the sleep time is displayed.

⑬ **Cancel Key (CANCEL)**
When this key is pushed during a direct-access tuning mode operation, sleep mode operation or clock mode operation, the mode is canceled and a return is made to the initial mode setting. This is used when changing the setting of the mode before pushing the enter key.

⑭ **Alarm Set Key (ALARM)**
Depress when setting the alarm time.

⑮ **Display Select Key (DISPLAY)**
When receiving the radio broadcast, this key is depressed, the display alternates between the frequency display and clock display.

⑯ **Band Select Keys (BAND)**
Use to select the desired band; FM, LW, MW, SW.

⑰ **Time Set Key (TIME SET)**
Use to change the display time.

⑱ **Memory Key (MEMORY)**
Use this key first when memorizing the frequency in the preset channels (0–9).

⑲ **Frequency Set Key (DIRECT)**

⑳ **Decimal Point Key (•)**
This is used as the decimal point key for frequency setting.

㉑ **Enter Key (ENTER)**
Depress this key after having programmed in the desired frequency or time setting with the Direct-Access Keys.

㉒ **Direct-Access Keys**
(DIRECT-ACCESS TUNING)
Depress these keys to set the frequency of a broadcasting station to be received or to set the clock time.

㉓ **Frequency/Clock Display**
The frequency of the broadcast station or time is indicated on this display. The display is switched between frequency and time using the Display Select Key.

㉔ **Light Switch (LIGHT)**
When this switch is depressed, the Frequency/Clock Display is illuminated, making it easier to see in darker surroundings.

㉕ **AC Voltage Selector (VOLTAGE SELECTOR)**
Set to your local voltage by turning this selector with a screwdriver. When operating on AC (household current), make sure this selector is properly adjusted.

㉖ **AC Socket (AC IN ~)**
For connection of power cord when operating on AC.

㉗ **Battery Compartment**
For holding batteries for memory back-up and DC operation.

㉘ **External Antenna/Earth Terminal**
(FM ANT/AM ANT)
For connection of external antenna.

RECEIVER OPERATION

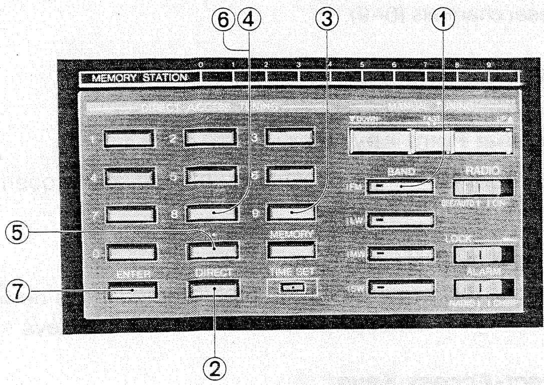
This receiver has three tuning modes; manual tuning, direct-access tuning and preset tuning.

Before Tuning Operation

First set the Volume Control to the desired position, and set the Radio Switch to "ON", then set the Lock Switch to off (slide it to the left).

■ Direct-Access Tuning

Example: To tune in a station on FM 98.8 MHz, press the indicated buttons in the numerical sequence shown. As each button is pressed, the display will change as shown.


⑥④
③
①
MEMORY STATION
0 1 2 3 4 5 6 7 8 9
DOWN
FAST
UP
BAND
RADIO
FM
LW
MW
SW
MEMORY
LOCK
ALARM
ENTER
DIRECT
TIME SET
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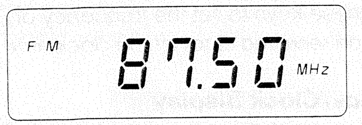

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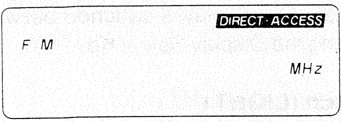
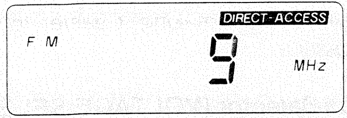
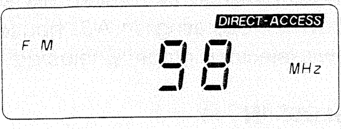
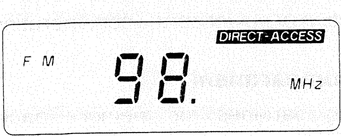
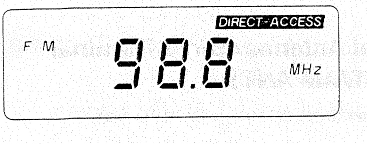
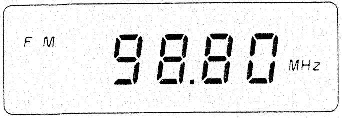

DIRECT·ACCESS
F M
MHz

③

DIRECT·ACCESS
F M
9
MHz

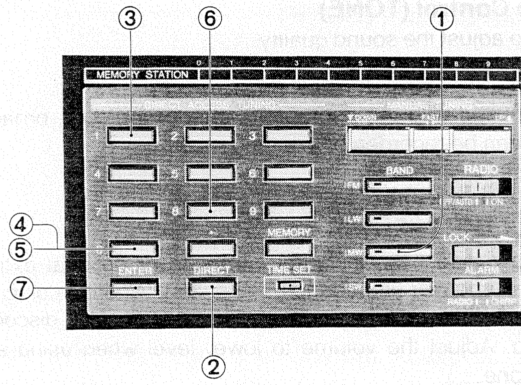
④

DIRECT·ACCESS
F M
98
MHz

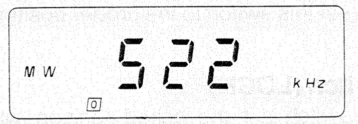
⑤

DIRECT·ACCESS
F M
98.
MHz

⑥

DIRECT·ACCESS
F M
98.8
MHz

⑦


Example: To tune in a station on MW 1008 kHz.


③
⑥
①
MEMORY STATION
0 1 2 3 4 5 6 7 8 9
DOWN
FAST
UP
BAND
RADIO
FM
LW
MW
SW
MEMORY
LOCK
ALARM
ENTER
DIRECT
TIME SET
④
⑤
⑦
②

①


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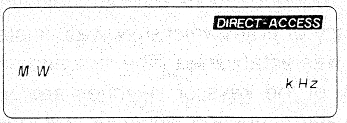
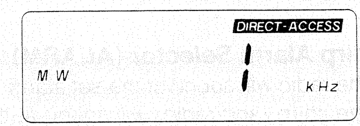
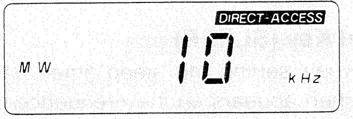
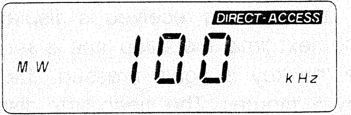
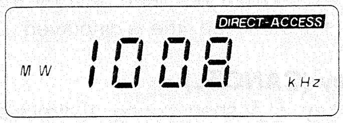
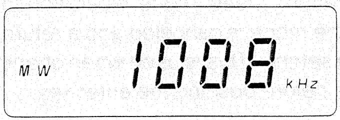

DIRECT·ACCESS
M W
kHz

③

DIRECT·ACCESS
M W
1
kHz

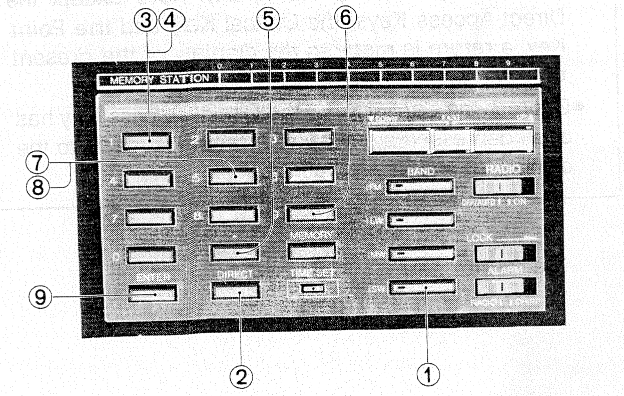
④

DIRECT·ACCESS
M W
10
kHz

⑤

DIRECT·ACCESS
M W
100
kHz

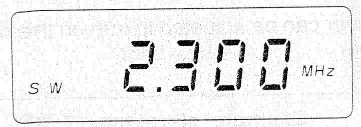
⑥

DIRECT·ACCESS
M W
1008
kHz

⑦


Example: To tune in a station on SW 11.955 MHz.


③④
⑤
⑥
⑦
⑧
⑨
②
①
MEMORY STATION
ENTER
DIRECT
MEMORY
BAND
RADIO
LOCK

①



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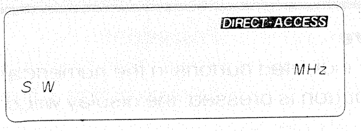
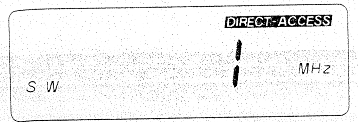
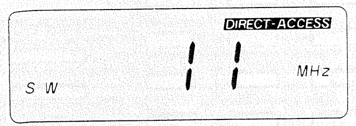

DIRECT-ACCESS
SW
MHz

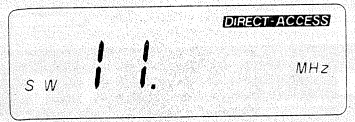
③


DIRECT-ACCESS
SW
1
MHz

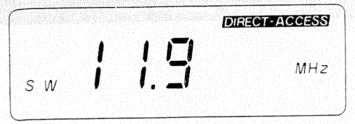
④


DIRECT-ACCESS
SW
11
MHz

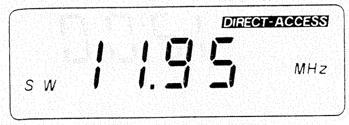
⑤


DIRECT-ACCESS
SW
11.
MHz

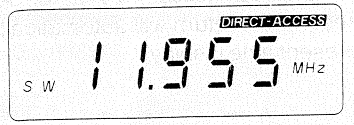
⑥


DIRECT-ACCESS
SW
11.9
MHz

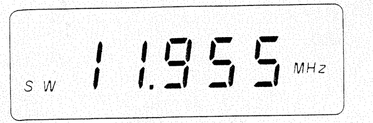
⑦


DIRECT-ACCESS
SW
11.95
MHz

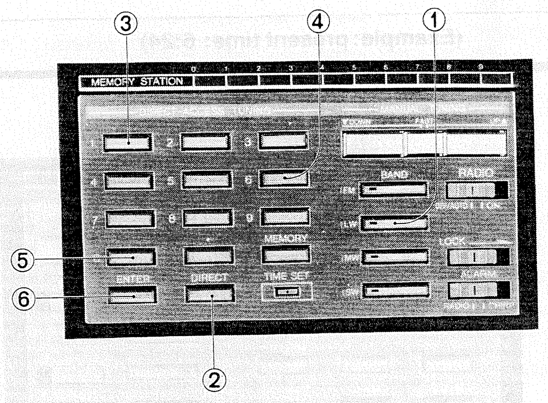
⑧


DIRECT-ACCESS
SW
11.955
MHz

⑨


SW
11.955
MHz

Example: To tune in a station on LW 160 kHz.


③
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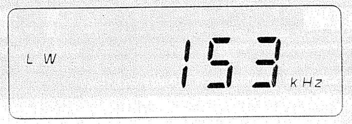
MEMORY STATION
ENTER
DIRECT
TIME SET
MEMORY
BAND
RADIO
LOCK

①



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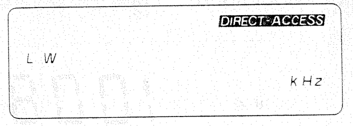
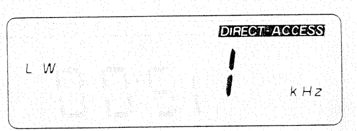
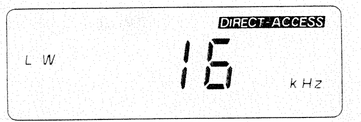

DIRECT-ACCESS
LW
kHz

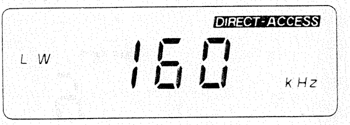
③


DIRECT-ACCESS
LW
1
kHz

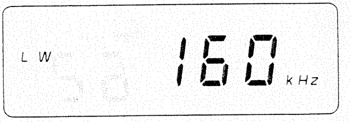
④


DIRECT-ACCESS
LW
16
kHz

⑤


DIRECT-ACCESS
LW
160
kHz

⑥



Notes:

- When the frequency is such that the directly accessed frequency does not coincide with the frequency step in the band, tuning is made to the nearest frequency immediately below the directly accessed frequency by discarding the difference.

  (Example) With MW 9 kHz (10 kHz) steps

(Directly accessed frequency)	(Tuned in frequency)
1007 kHz	999 kHz (1000 kHz)
1016 kHz	1008 kHz (1010 kHz)

- During the time from when the Direct-Access Key is pressed until the Enter Key is pressed, and during "E" (error) indication, the frequency immediately before the Direct Key was pressed is tuned in.
- Press the Cancel Key to cancel the direct-access tuning operation after having already pressed the Direct-Access Key and before the Enter Key has been pressed.
- Press the Direct-Access Key if you notice something wrong with the frequency before pressing the Enter Key. This action establishes the same mode as that when the key was pressed and the proper frequency can now be entered.
- If the reception frequency band is set outside of the broadcasting band during direct-access tuning, a return is made to the display of the frequency which was received before, after a 5-second error display.
- Input during direct-access tuning is made in kHz units for the LW and MW bands and in MHz units for the FM and SW bands.
- The MW frequency steps come in two units: 9 kHz and 10 kHz. To switch over the frequency step, first set the Radio switch "ON" and disconnect the unit's main battery, back-up battery and AC power supplies, allow several (2 or 3) minutes to elapse and then switch over using the MW Frequency Step Selector.
- FM and SW frequencies are indicated in MHz units with both the decimal point and digits after the decimal point being indicated. The LW and MW frequencies are indicated in kHz units and the decimal point is not displayed. This means that any entry of the Decimal Point Key during direct-access tuning will not be acknowledged.

■ Manual Tuning

1) Set the Band Select Key to the desired radio band.
2) Tune in your favorite station using the Manual Tuning Keys. Push these keys to change the indication of the Frequency/Clock Display.

When pusing UP (▲) key—

FM: 87.50→87.55 .... 107.95→108.00 MHz
(increase in steps of 0.05)
LW: 153→154 .... 280→281 kHz
(increase in steps of 1)
MW: 522→531 .... 1602→1611 kHz (9 kHz)
530→540 .... 1600→1610 (10 kHz)
(increase in steps of 9 or 10*)
SW: 2.300→2.305 .... 26.095→26.100 MHz
(increase in steps of 0.005)

When pushing DOWN (▼) key—

FM: 108.00→107.95 ..... 87.55→87.50 MHz
(decrease in steps of 0.05)
LW: 281→280 .... 154→153 kHz
(decrease in steps of 1)
MW: 1611→1602 .... 531→522 kHz (9 kHz)
1610→1600 .... 540→530 (10 kHz)
(decrease in steps of 9 or 10*)
SW: 26.100→26.095 ..... 2.305→2.300 MHz
(decrease in steps of 0.005)

*
See the last note below.

Notes:

- The tuning operation can be accelerated by pressing the UP or DOWN Key and next the FAST Key. If the UP or DOWN Key is kept depressed and the FAST Key is released, normal speed is resumed. If the FAST Key is kept depressed and the UP or DOWN Key is released, the up/down function is terminated.
- Set the Lock Switch to on (switched to the right side). In this way, should you happen to touch the Manual Tuning Keys inadvertently, the frequency will not change.
- When the frequency of each band exceeds its range, the frequency automatically cycles from the maximum or minimum frequency (or from the minimum to the maximum frequency), and continues to advance upward (or downward) through the band again.
- If the Manual Tuning Key (up or down) is depressed when the Frequency Step Selector is set to the "9 kHz" position, the indication of the Frequency/Clock Display will change in 9 kHz steps.
  It will change in 10 kHz steps when the Frequency Step Selector is set to the "10 kHz" position.

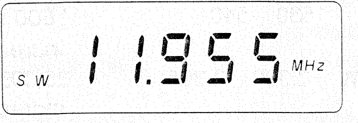
Preset Tuning

If desired broadcasting stations are preset into each of the channels (0–9), all you have to do to listen to the program of a station is to depress the corresponding preset tuning (Direct-Access) keys.

●Presetting Procedure

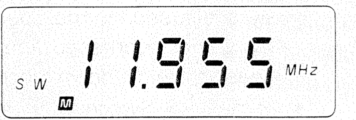
1) Tune in the frequency to be stored using the direct-access and/or manual tuning method. The frequency will be displayed on the frequency/clock display.

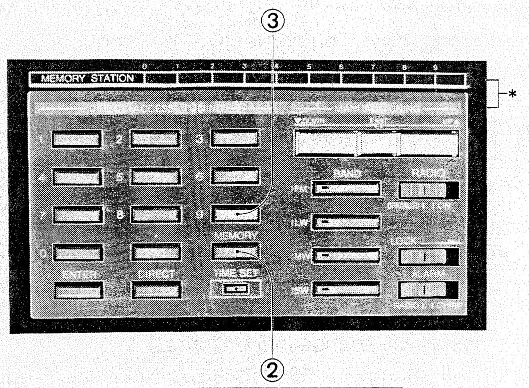
[Example]

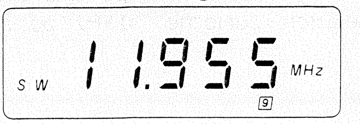

SW
11.955
MHz

2) Depress the Memory Key. The "M" display appears on the left of the frequency display. To cancel the memory function, simply depress the key again or depress the Cancel Key.
The "M" display will disappear. If the Memory Key is not depressed within 5 seconds after the frequency has been selected.

3) Depress the preset tuning (Direct-Access) key corresponding to the channel in which the selected frequency is to be stored.
The depressed channel number is indicated on the Frequency/Clock Display. In the illustration, the selected frequency is stored in channel 9.


SW
M
11.955
MHz


③
*
MEMORY STATION
0 1 2 3 4 5 6 7 8 9
1 2 3
4 5 6
7 8 9
0
ENTER
DIRECT
TIME SET
MEMORY
BAND
RADIO
LOCK
ALARM
②


SW
11.955
MHz
9

4) The frequency has now been preset in one memory channel. Repeat steps 1) through 3) for other preset channels.

*Write in the name of the broadcasting station which has been stored in the memory on the accessory memory channel sheets and adhere it to the Memory Station number.

Notes:

- ●The preset channel before presetting is set automatically with MW 522 kHz (when MW Frequency Step Selector is selected to "9 kHz".) When the MW Frequency Step Selector is selected to "10 kHz", the preset channel is set automatically with MW 530 kHz.
- ●When setting another frequency into a memory channel, the preset frequency previously in that channel will be displayed until the first Direct-Access Key is pressed.

●Tuning

When the preset tuning (Direct-Access) key corresponding to the memorized frequency is depressed, the program of the station at that frequency is received immediately. Automatic selection of a frequency stored in the memory and different from previous tuned can be done without changing the band manually by the Band Select Key.

Last One Memory

This memory is used when the radio's power is off. When the radio is switched on, the frequency received immediately before it was switched off is tuned in again.

Last Preset Channel Memory

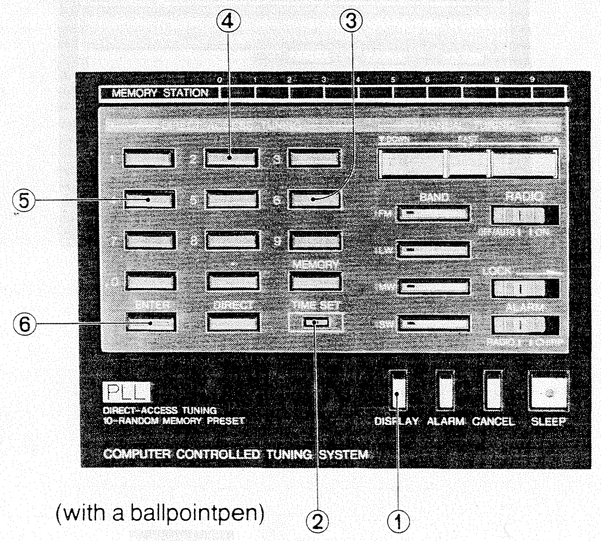
This memory is used when switching between the frequency bands. When the Band Key is pressed to select a band and there is already a frequency stored in the preset memory in that band, the preset frequency which was last received in that band is tuned in. When a frequency in that band has not been stored into the preset memory, the lowest frequency in the band is tuned in.

CLOCK FUNCTION

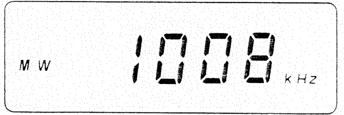
Clock adjustment

Press the indicated buttons in the numerical sequence shown. As each button is pressed, the display will change as shown.

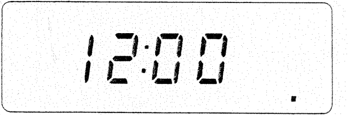
(Example: present time: 6:24)


④
③
⑤
⑥
MEMORY STATION
0 1 2 3 4 5 6 7 8 9
ENTER
DIRECT
TIME SET
MEMORY
BAND
RADIO
LOCK
ALARM
PLL
DIRECT-ACCESS TUNING
10-RANDOM MEMORY PRESET
DISPLAY
ALARM
CANCEL
SLEEP
COMPUTER CONTROLLED TUNING SYSTEM
②
①

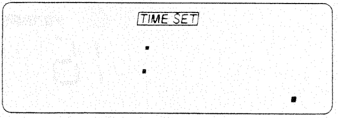
(with a ballpointpen)



①

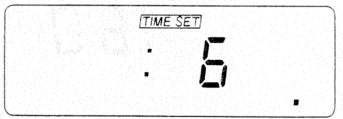


②

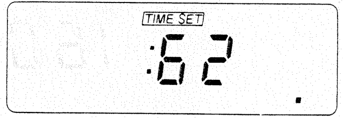


(with a ballpoint pen)

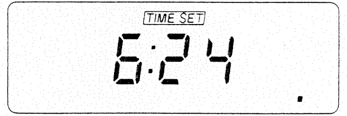
③



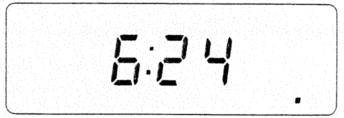
④



⑤


TIME SET
6:24

⑥



To set the exact time, push the Enter Key when you hear the zero seconds time signal from the radio, television or telephone time service.

Notes:

- ●In case of indicating an invalid time by using the Direct-Access Keys, or depressing any keys except the Direct-Access Keys, the Cancel Key and the Point Key, a return is made to the display of the present time after a 5-second error display.
- ●Depress the Cancel Key if the Direct-Access Key has been depressed by mistake. A return is made to the display of the present time.

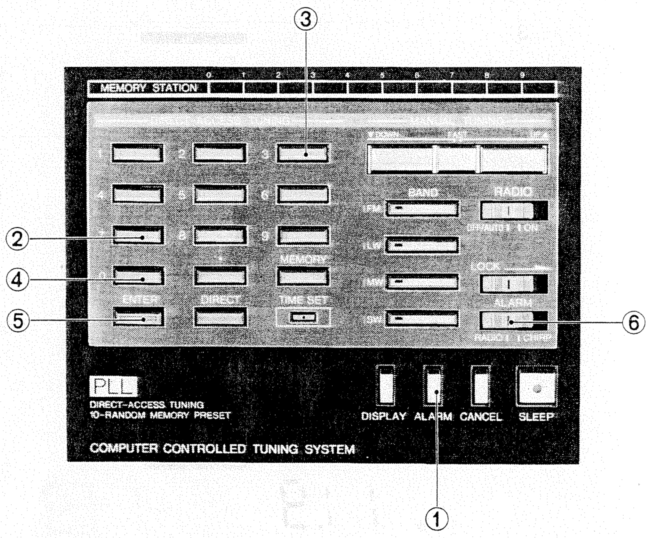
Operation as an alarm

Your receiver can be adjusted to turn on the radio or chirp (and radio) alarm.

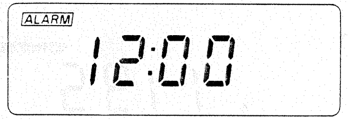
(Example: alarm time 7:30)

Procedure:

Press the indicated buttons in the numerical sequence shown. As each button is pressed, the display will change as shown.

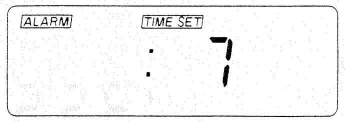

③
②
④
⑤
⑥
MEMORY STATION
0 1 2 3 4 5 6 7 8 9
ENTER
DIRECT
TIME SET
MEMORY
BAND
RADIO
LOCK
ALARM
PLL
DIRECT-ACCESS TUNING
10-RANDOM MEMORY PRESET
DISPLAY
ALARM
CANCEL
SLEEP
COMPUTER CONTROLLED TUNING SYSTEM
①

①

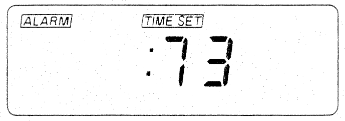


If the Direct-Access Key is not depressed within 5 seconds, a return will automatically be made to the present time display.

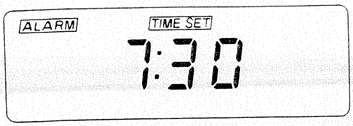
②


ALARM
TIME SET
: 7

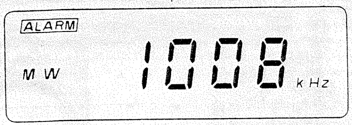
③


ALARM
TIME SET
:73

④



⑤



⑥ Set the Radio/Chirp Alarm Selector to "RADIO" or "CHIRP".

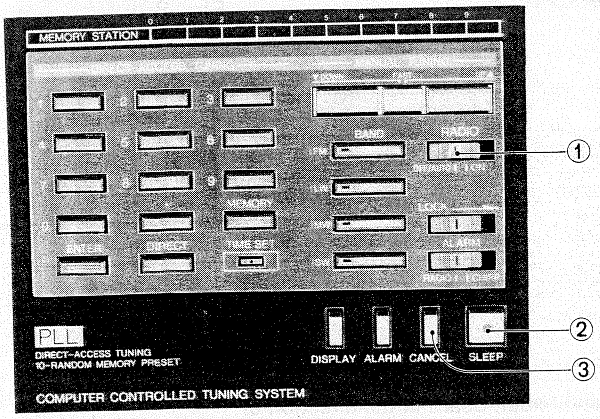
Notes:

- The Alarm sound stops by depressing the Cancel Key, but the next day at the Alarm time, starts to function again.
- If you depress the Cancel Key while the Alarm Set Key is depressed to display the Alarm time (for about 5 seconds), the Alarm function is canceled. This time, if you depress the Alarm Set Key first, and next the Enter Key, the Alarm is set at the previous time.

■ Operation as a go-to-sleep timer

You can set the receiver to play for up to 60 minutes, and then shut off automatically.

1) Set the Radio Switch to "OFF/AUTO".
2) Press the Sleep Set Key. The Frequency/Clock Display will show the tuned frequency. Press the Sleep Set Key again and the radio will play for up to 60 minutes then automatically shut off. Each successive press of the Sleep Set Key will decrease the radio play time by 5 minutes. If the Sleep Set Key is repeatedly pressed, the timer will cycle down through zero (in 5 minutes steps), back to 60 minutes and down again.
3) To cancel the setting and shut the radio off, just push the Cancel Key.



Notes:

- When the Sleep Set Key is depressed while the sleep timer is operating, the rest minutes of the sleep time is displayed.
  After 5 seconds, the display returns to the radio frequency.
- The radio or chirp alarm can be activated while the sleep timer is operating.

■ Operation in combination go-to-sleep timer & wake-up alarm function

You can set the receiver to play for up to 60 minutes, shut off automatically, and then activate the radio or chrip (and radio) alarm automatically at the desired wake-up time.

1) As instructed in the section of "Operation as an alarm", set the desired wake-up time and set the Radio Switch to "OFF/AUTO".
2) As instructed in the section of "Operation as a go-to-sleep timer", push the Sleep Set Key.
   You can enjoy listening to the radio for up to 60 minutes.

Notes:

- The Alarm will sound for 120 minutes when activated (the Sleep function lasts up to for 60 minutes). To stop the Alarm (or the Sleep) during function, depress the Cancel Key or set the Radio Switch to "ON" and to "OFF/AUTO" again.
- As the Alarm function takes priority over the Sleep function, the Sleep function is released when the Alarm function is turned on.
- When the Alarm function is turned on, the present time is indicated after a 5-second display of the radio frequency.
- In order to release the Alarm or the Sleep function while the Lock Key is set on (slid to the right), set the Radio Switch to "ON" and to "OFF/AUTO" again.

DISASSEMBLY INSTRUCTIONS

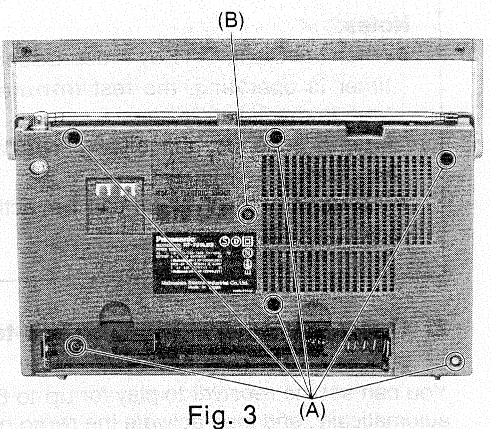


Fig. 3

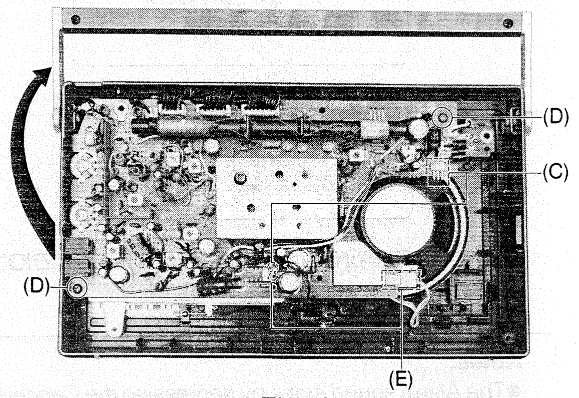


Fig. 4

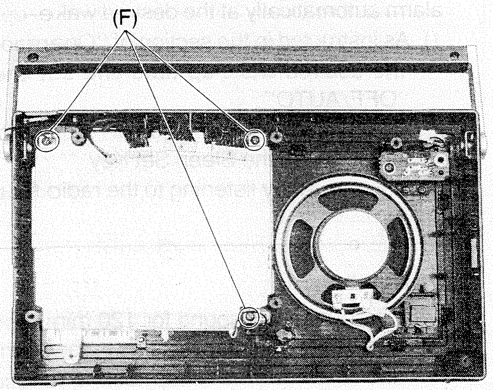


Fig. 5

■ TO REASSEMBLE LCD

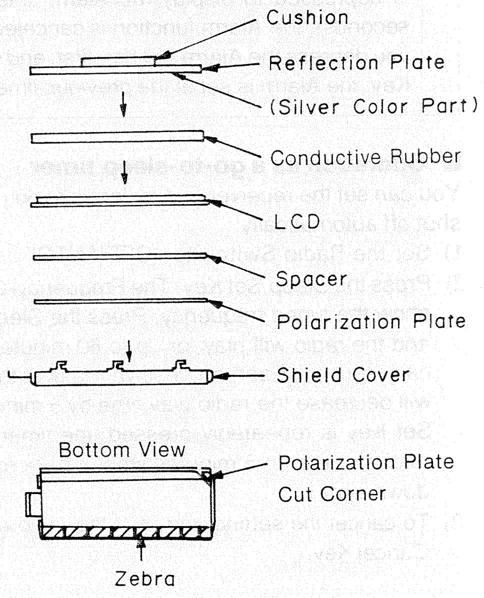

Cushion
Reflection Plate
(Silver Color Part)
Conductive Rubber
LCD
Spacer
Polarization Plate
Shield Cover
Bottom View
Polarization Plate
Cut Corner
Zebra

Fig. 8

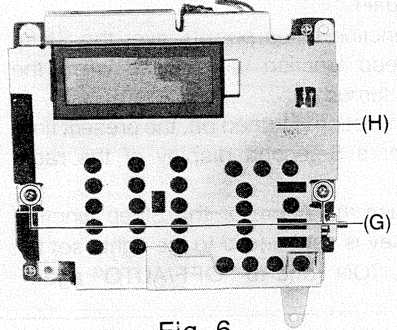


Fig. 6

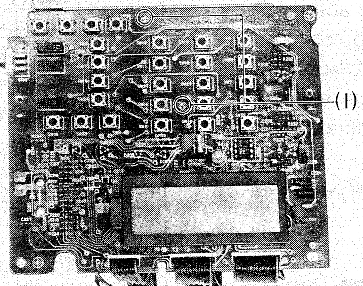


Fig. 7

Procedure	To remove—.	Remove—.	Show in Fig—.
1	Rear Cabinet	Remove the battery cover.	—
2		Screw (3×20) .... (A)×6	3
3		Screw (3×6) .... (B)×1	3
4		Socket (CS3,8).. (C)×2	4
5	Radio Circuit Board	Screw (3×10) .... (D)×2	4
6		Socket (CS4, 9) .... (E)×2	4
7		Reverse the radio circuit board in the direction of arrow.	4
8	Control Circuit Board *1	Screw (3×10) .... (F)×3	5
9		Screw (3×6).. (G)×2	6
10		Remove the control circuit board cover ......(H)×1	6
11		Screw (3×6) .... (I)×2	7

*1 To reassemble the control circuit board, note the following.
1. Remove the RADIO, LOCK and RADIO/CHIRP knobs.
2. Set the RADIO, LOCK and RADIO/CHIRP switch lever to right position.
3. Reassemble the control circuit board to front cabinet Assembly.
4. Insert the RADIO, LOCK and RADIO/CHIRP knobs to switch lever.

LIQUID CRYSTAL DISPLAY (LCD)

1) The LCD and IC201 are connected in the following way:

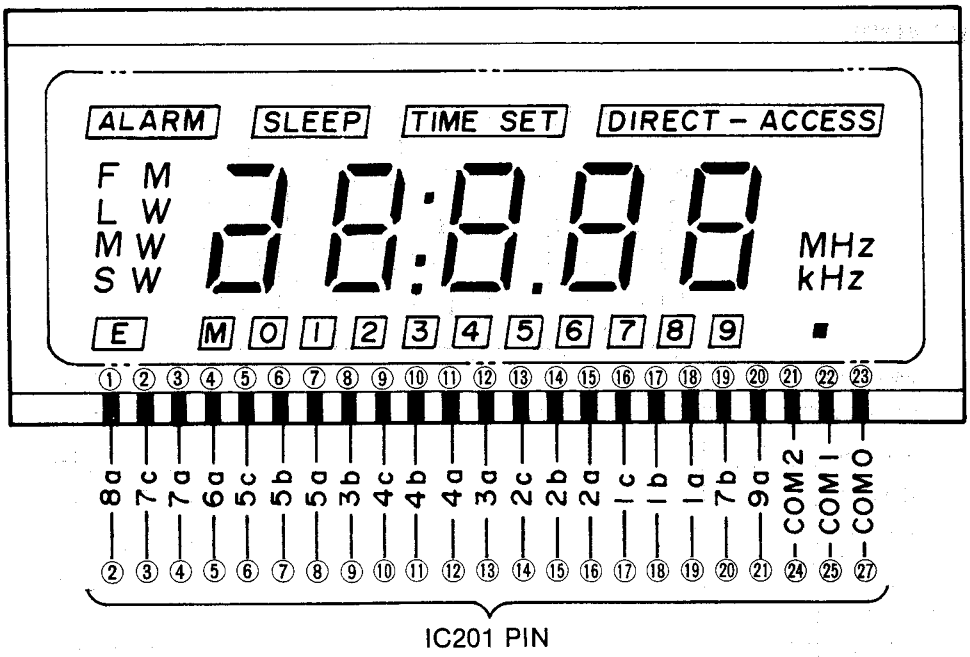

ALARM
SLEEP
TIME SET
DIRECT - ACCESS
FM
LW
MW
SW
MHz
kHz
E
M
0
1
2
3
4
5
6
7
8
9
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉒ ㉓
8a 7c 7a 6a 5c 5b 5a 3b 4c 4b 4a 3a 2c 2b 2a 1c 1b 1a 7b 9a COM2 COM1 COM0
② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑ ㉔ ㉕ ㉗
IC201 PIN

Fig. A

2) The common and segment terminals of the LCD are connected in the following way:

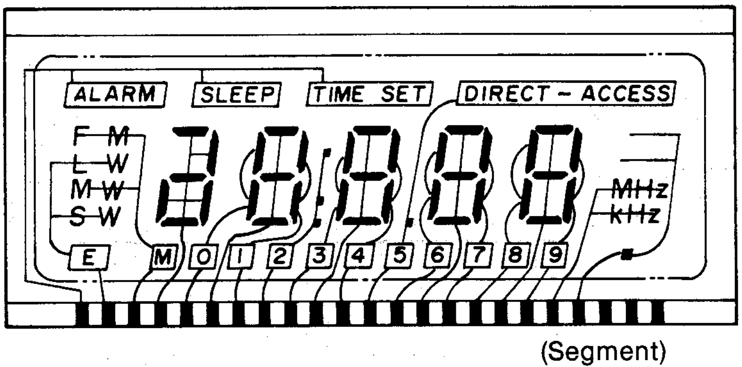

ALARM
SLEEP
TIME SET
DIRECT - ACCESS
FM
LW
MW
SW
MHz
kHz
E
M
0
1
2
3
4
5
6
7
8
9
(Segment)

Fig. B

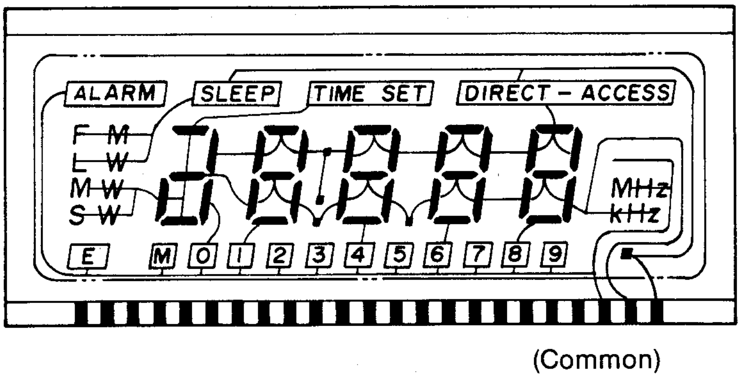
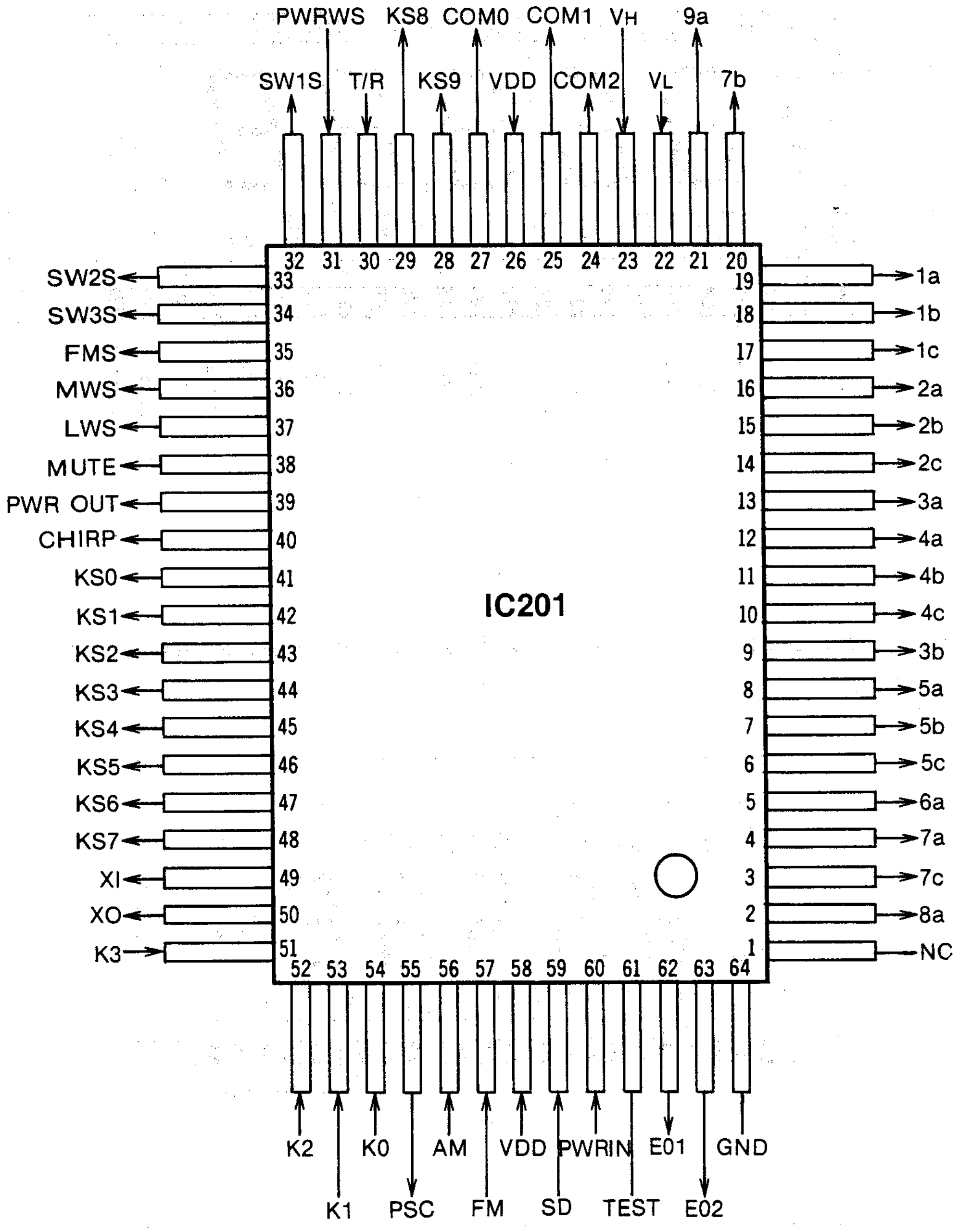

ALARM
SLEEP
TIME SET
DIRECT - ACCESS
FM
LW
MW
SW
MHz
kHz
E
M
0
1
2
3
4
5
6
7
8
9
(Common)

Fig. C

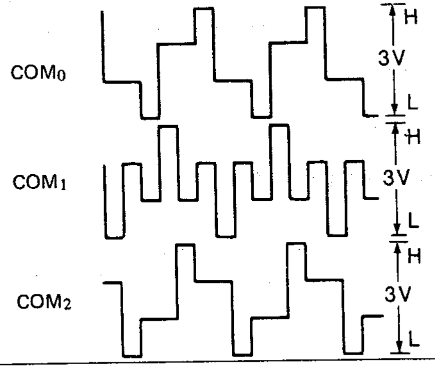
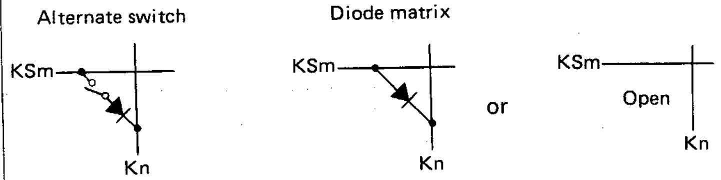
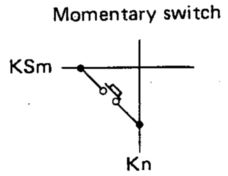
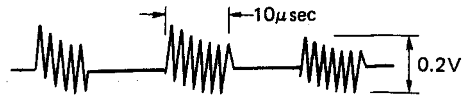
RVIUPD1706G (IC201): EACH TERMINAL FUNCTION & WAVEFORM

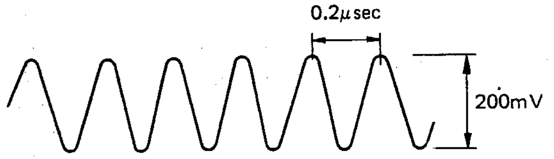
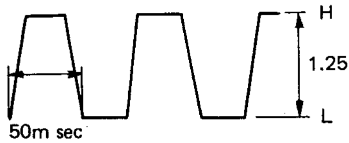
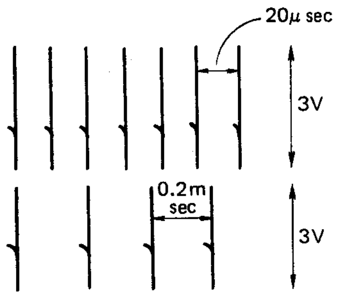
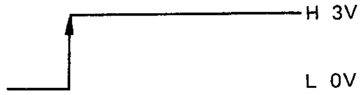
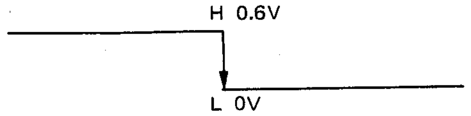
1) Terminal view

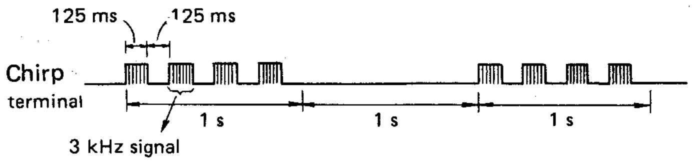

PWRWS
KS8
COM0
COM1
VH
9a
SW1S
T/R
KS9
VDD
COM2
VL
7b
32
31
30
29
28
27
26
25
24
23
22
21
20
SW2S
SW3S
FMS
MWS
LWS
MUTE
PWR OUT
CHIRP
KS0
KS1
KS2
KS3
KS4
KS5
KS6
KS7
XI
XO
K3
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
IC201
19
18
17
16
15
14
13
12
11
10
9
8
7
6
5
4
3
2
1
1a
1b
1c
2a
2b
2c
3a
4a
4b
4c
3b
5a
5b
5c
6a
7a
7c
8a
NC
52
53
54
55
56
57
58
59
60
61
62
63
64
K2
K0
AM
VDD
PWRIN
E01
GND
K1
PSC
FM
SD
TEST
E02

(TOP VIEW) Fig. D

2) Explanation of each terminal

Pin No.	Symbol	Terminal	Description
2 ~ 21	1a ~ 9a	LCD segment signal	Output terminals for LCD segment signals. (1/3 duty and 1/3 bias LCD drive.) Refer to Fig. E for output waveforms.
24 25 27	COM$_2$ COM$_1$ COM$_0$	LCD common signal	Terminals for LCD common signal output. 
58	V$_{DD}$	Power input	A voltage of 3V ± 10% supply to this terminal during device operation.
28 29 41	KS$_9$ KS$_8$ KS$_0$	Key return signal source for alternate switch.	Key return signal source output terminals for diode matrix initialize on the key matrix and alternate switch.  Alternate switch Diode matrix KSm Kn KSm Kn or KSm Open Kn
42 ~ 48	KS$_1$~KS$_7$	Key return signal source for momentary switch.	Key return signal source output terminals for momentary switch on the key matrix. 
51 ~ 54	K$_3$~K$_0$	Key return signal input	Terminals for key matrix key return signal input.
30	T/R	TAPE/RADIO switching input	Terminal for Tape/Radio switching signal input In the RF799, this terminal switches the operation instead of the tape. High level : PLL stops. Low level : PLL functions.
49 50	XI XO	Quartz oscillator	Terminals used for connecting a quartz oscillator. Connects a 150 kHz quartz oscillator.
55	PSC	Pre-scaler control output.	This terminal is used for outputting a signal to change the dividing ratio of the pre-scaler. The RVIUPB566C is used for the pre-scaler whose dividing radio is switchable between 1/16 and 1/17. The dividing ratio (1/16, 1/17) switching is determined by the input frequency at the PLL side. 

Pin No.	Symbol	Terminal	Description
56	AM	VCO input for LW, MW and SW$_1$	Terminal used for inputting local oscillation output for LW, MW and SW$_1$. [Example] MW 1000 kHz 
57	FM	VCO input for SW$_2$, SW$_3$ and FM	Terminal used for inputting the output whose local oscillation output of FM, SW$_2$ and SW$_3$ is divided (1/16, 1/17) by the pre-scaler RVIUPB566C [Example] 90 MHz 
60	PWR IN	Main power ON/OFF detection input	Input terminal for the unit's main power supply ON/OFF detection.
61	TEST	Device test terminal	Terminal to test the device. Normally connected to "GND".
62 63	EO$_1$ EO$_2$	Error Out output	Terminals for phase detector charge pump output. If the oscillation frequency divided signal is higher than the reference frequency, a high level signal is outputted from these terminals, and if it is lower, a low level signal is outputted. When the both agree, a floating state is achieved. EO$_1$ terminal is for FM and SW$_{1, 2, 3}$ output signals. EO$_2$ terminal is for LW and MW output signals. [Example] FM 90MHz  [Example] MW1000kHz
64	GND	Ground	Ground terminal
31	PWRSW	Radio switch ON/OFF detection input	Input terminal used for detecting the unit's Radio switch ON/OFF. To operate the unit with the PWROUT (39 pins) output power, source, input high level and, to stop the unit, input low level. 
32 ~ 37	SW$_1$S SW$_2$S SW$_3$S FMS MWS LWS	VCO selection Signal output	Output terminals for VCO selection signal. These are active low signals. 

Pin No.	Symbol	Terminal	Description
38	MUTE	Mute output	Muting signal output terminal used for eliminating shock noise when the PLL is unlocked. The output is active high. For output waveforms, refer to Fig. F, G.
39	PWR OUT	Main power switching output	Terminal for the unit's main power ON/OFF switching signal output. When the output signal is in a low level, the main power is turned ON, and a high level output signal turns the unit's main power switch OFF.
40	CHIRP	Chirp output	Terminal for modulation signal output for chirp. During alarm operation, the signal in which 3kHz pulse is modulated with 4Hz and 0.5Hz is outputted.  125 ms 125 ms Chirp terminal 1 s 1 s 1 s 3 kHz signal

3) Output signal waveforms of LCD segment.

These output signal waveforms are produced when the frequency is FM 90.00MHz, waveforms of the segments vary with frequency.

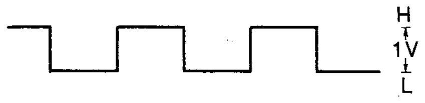
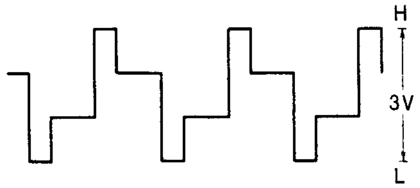
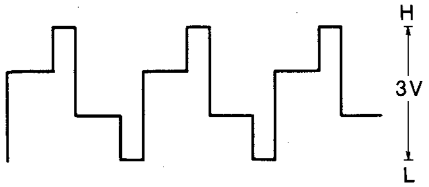
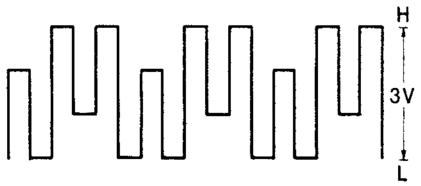
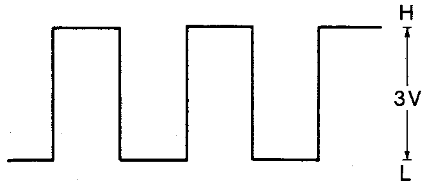
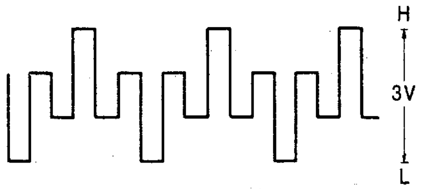
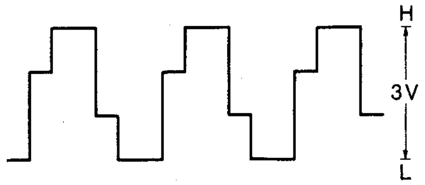
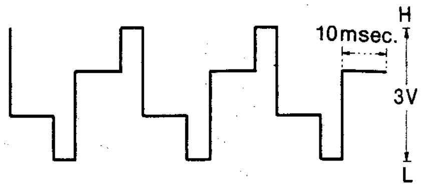
Pin No.	Output signal waveforms	Pin No.	Output signal waveforms
2, 3, 5, 21		9, 20, 24	
4, 6,		11, 15, 18	
7		13, 25	
8, 10, 12, 14, 16, 17, 19		27	 10msec. H 3V L

Fig. E

4) Mute Timing

1. Preset channel call

a) When the VCO is not switched

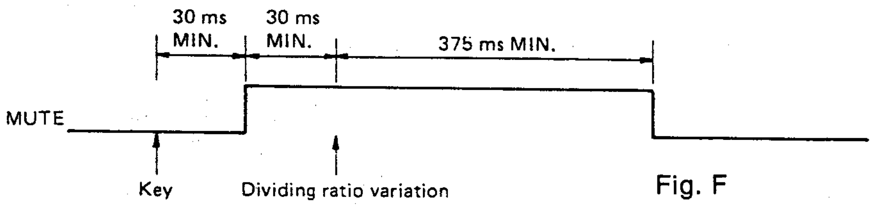

30 ms MIN.
30 ms MIN.
375 ms MIN.
MUTE
Key
Dividing ratio variation

Fig. F

b) When the VCO is switched

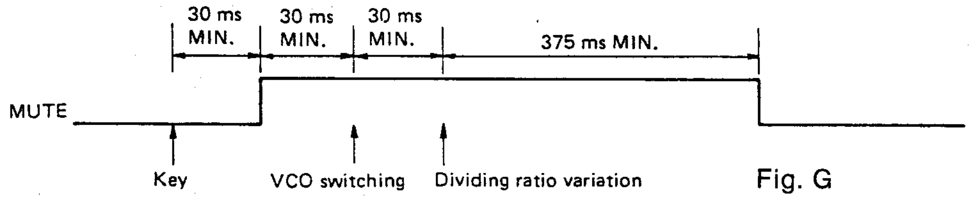

30 ms MIN.
30 ms MIN.
30 ms MIN.
375 ms MIN.
MUTE
Key
VCO switching
Dividing ratio variation

Fig. G

2. Radio Switch Operation (The timing of Radio ON/OFF by alarm/sleep operation is the same.)

a) RADIO SW OFF → ON (Low → High)

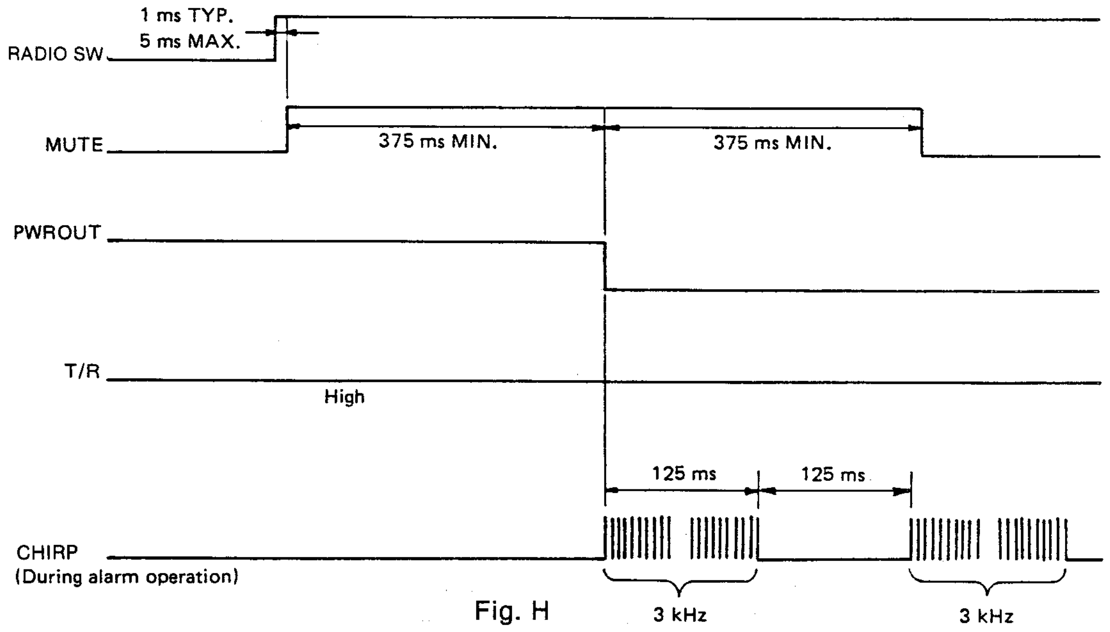

1 ms TYP.
5 ms MAX.
RADIO SW
MUTE
375 ms MIN.
375 ms MIN.
PWROUT
T/R
High
125 ms
125 ms
CHIRP
(During alarm operation)
3 kHz
3 kHz

Fig. H

b) RADIO SW ON → OFF (High → Low)

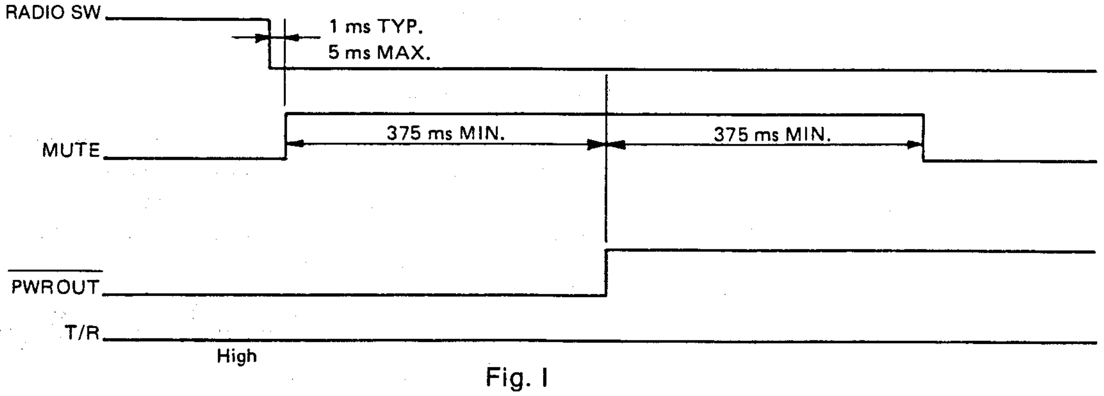

RADIO SW
1 ms TYP.
5 ms MAX.
MUTE
375 ms MIN.
375 ms MIN.
PWROUT
T/R
High

Fig. I

BLOCK DIAGRAM

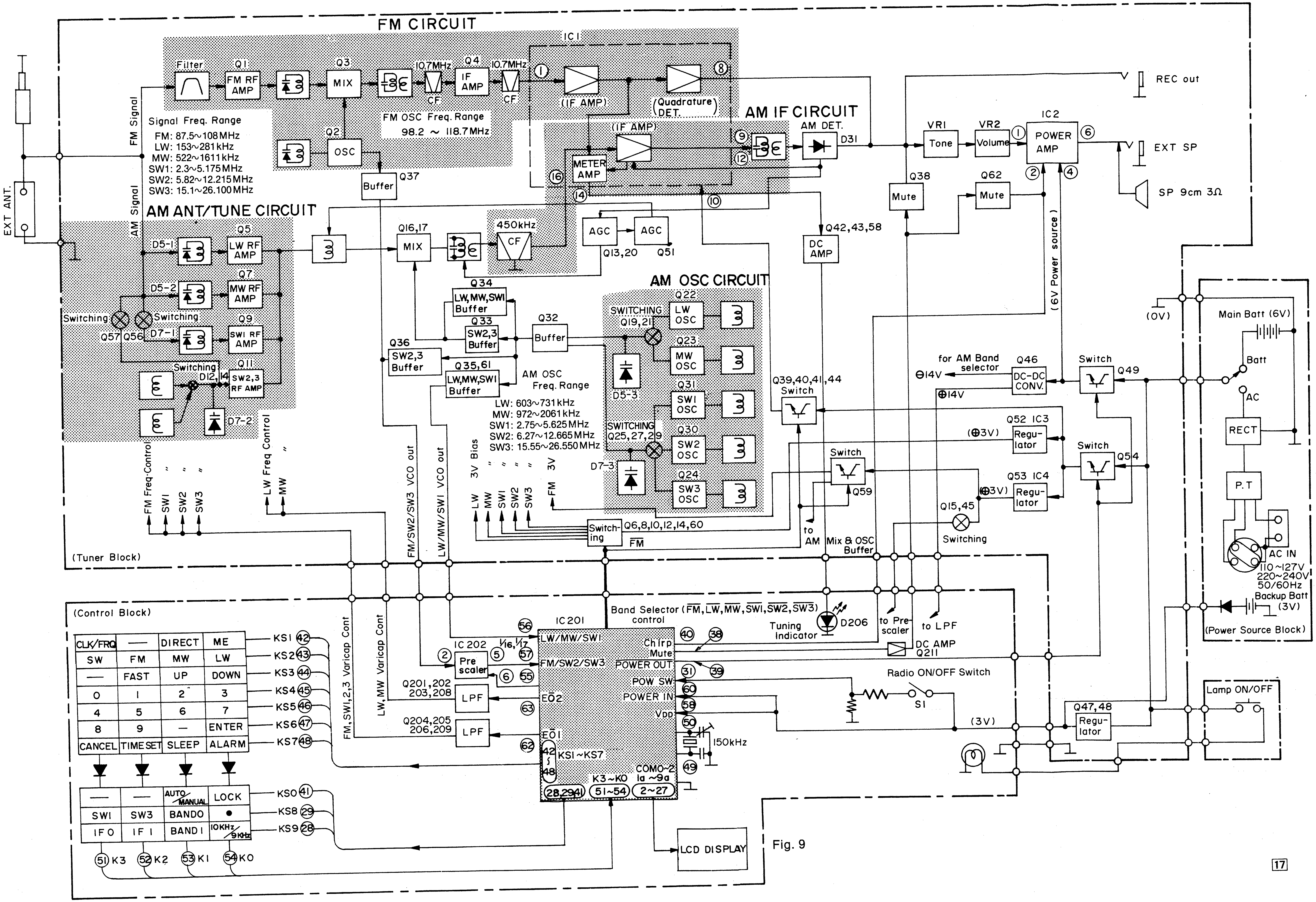
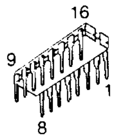
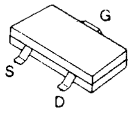

FM CIRCUIT
IC1
Filter
Q1
FM RF AMP
Q3
MIX
10.7MHz
Q4
IF AMP
10.7MHz
CF
CF
①
⑧
(IF AMP)
(Quadrature) DET.
FM OSC Freq. Range
98.2 ~ 118.7MHz
Q2
OSC
Q37
Buffer
FM Signal
AM Signal
Signal Freq. Range
FM: 87.5~108MHz
LW: 153~281kHz
MW: 522~1611kHz
SW1: 2.3~5.175MHz
SW2: 5.82~12.215MHz
SW3: 15.1~26.100MHz
EXT ANT.
AM ANT/TUNE CIRCUIT
Q5
D5-1
LW RF AMP
Q7
D5-2
MW RF AMP
Q9
D7-1
SW1 RF AMP
Switching
Switching
Q57
Q56
Switching
D12, 14
Q11
SW2,3 RF AMP
D7-2
FM Freq-Control
SW1
SW2
SW3
" " "
LW Freq Control
MW
"
Q16,17
MIX
Q34
LW,MW,SW1 Buffer
Q33
SW2,3 Buffer
Q36
SW2,3 Buffer
Q35,61
LW,MW,SW1 Buffer
Q32
Buffer
450kHz
CF
AM IF CIRCUIT
(IF AMP)
METER AMP
⑯
⑭
⑩
⑨
⑫
AM DET.
D31
AGC
AGC
Q13,20
Q51
Q42,43,58
DC AMP
AM OSC CIRCUIT
Q22
SWITCHING
Q19,21
LW OSC
Q23
MW OSC
D5-3
Q31
SW1 OSC
SWITCHING
Q25,27,29
Q30
SW2 OSC
D7-3
Q24
SW3 OSC
AM OSC Freq. Range
LW: 603~731kHz
MW: 972~2061kHz
SW1: 2.75~5.625MHz
SW2: 6.27~12.665MHz
SW3: 15.55~26.550MHz
FM/SW2/SW3 VCO out
LW/MW/SW1 VCO out
3V Bias
" " " "
3V
LW
MW
SW1
SW2
SW3
FM
Switch-ing
Q6,8,10,12,14,60
FM
(Tuner Block)
Q39,40,41,44 Switch
Switch
Q59
to AM
Mix & OSC Buffer
Q15,45
Switching
VR1
Tone
VR2
Volume
IC2
POWER AMP
①
⑥
②
④
Q38
Mute
Q62
Mute
REC out
EXT SP
SP 9cm 3Ω
(6V Power source)
for AM Band selector
Q46
⊖14V
DC-DC CONV.
⊕14V
Switch
Q49
Q52 IC3
(⊕3V)
Regu-lator
Q53 IC4
(⊕3V)
Regu-lator
Switch
Q54
(0V)
Main Batt (6V)
Batt
AC
RECT
P.T
AC IN
110~127V
220~240V
50/60Hz
Backup Batt
(3V)
(Power Source Block)
(Control Block)
CLK/FRQ
—
DIRECT
ME
SW
FM
MW
LW
—
FAST
UP
DOWN
0
1
2
3
4
5
6
7
8
9
—
ENTER
CANCEL
TIME SET
SLEEP
ALARM
KS1 (42)
KS2 (43)
KS3 (44)
KS4 (45)
KS5 (46)
KS6 (47)
KS7 (48)
—
—
AUTO/MANUAL
LOCK
SW1
SW3
BAND0
●
IF0
IF1
BAND1
10KHz/9KHz
KS0 (41)
KS8 (29)
KS9 (28)
(51) K3
(52) K2
(53) K1
(54) K0
FM,SW1,2,3 Varicap Cont
LW,MW Varicap Cont
Q201,202 203,208
LPF
Q204,205 206,209
LPF
IC202
②
Pre scaler
⑤
⑥
1/16,1/17
IC201
(56)
LW/MW/SW1
(57)
FM/SW2/SW3
(55)
(63)
EO2
(62)
EO1
(42)~(48)
KS1~KS7
(28,29,41)
K3~K0
(51~54)
COMO~2 Ia~9a
(2~27)
(49)
Chirp
Mute
POWER OUT
POW SW
POWER IN
VDD
(40)
(38)
(31)
(39)
(60)
(58)
(50)
150kHz
LCD DISPLAY
Band Selector (FM, LW, MW, SW1, SW2, SW3) control
Tuning Indicator
D206
to Pre-scaler
to LPF
DC AMP
Q211
Radio ON/OFF Switch
S1
(3V)
Q47,48
Regu-lator
Lamp ON/OFF

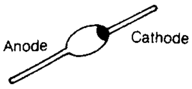
Fig. 9



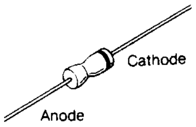
IC1



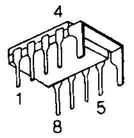
Q5, 7, 9, 32, 47


Anode
Cathode

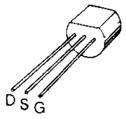
D4


Cathode
Anode

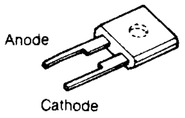
D31, 301



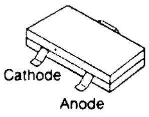
IC2



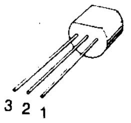
Q11


Anode
Cathode

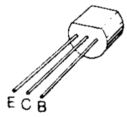
D5, 7


Cathode
Anode

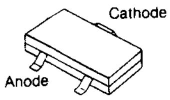
D37, 209



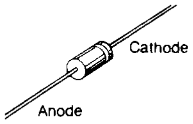
IC3, 4



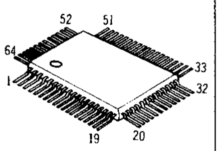
Q41, 46


Cathode
Anode

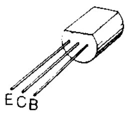
D8, 202~205, 208


Cathode
Anode

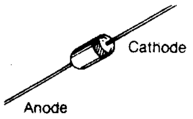
D302~305


52
51
64
1
33
32
19
20

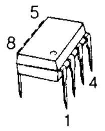
IC201



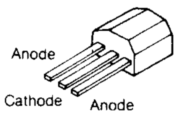
Q49, 54


Cathode
Anode

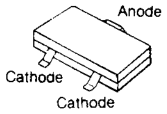
D10, 12, 14, 15, 18, 27, 40, 41, 50



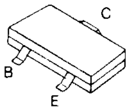
IC202


Anode
Cathode
Anode

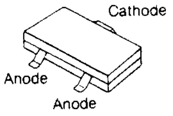
D1, 2


Anode
Cathode
Cathode

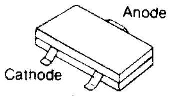
D13, 16, 207



Q1~4, 6, 8, 10, 12~31, 33~40, 42~45, 48, 50~53, 55~62, 201~211, 220


Cathode
Anode
Anode

D3, 19, 201


Anode
Cathode

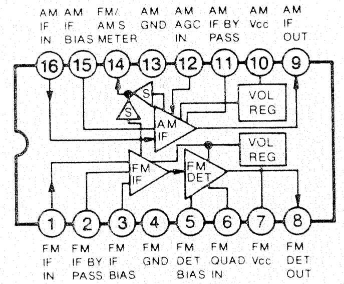
D28

SCHEMATIC DIAGRAM MODEL RF-79

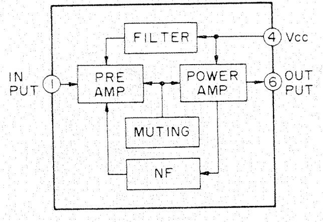
Notes:

1. S1 ......Radio switch in "OFF/AUTO" position.
2. S2 ......Radio/Chirp switch in "RADIO" position. (1...RADIO, 3...CHIRP).
3. S3 ......Lock switch.
4. S4 ......MW frequency step switch. (9kHz/10kHz).
5. S5 ......Alarm switch.
6. S6 ......Enter switch.
7. S7 ......Direct Access Switch, ⑦.
8. S8 ......Direct Access Switch, ③.
9. S9 ......Down switch.
10. S10 ......LW switch.
11. S11 ......Memory switch.
12. S12 ......Sleep switch.
13. S13 ......Decimal point switch.
14. S14 ......Direct Access Switch, ⑥.
15. S15 ......Direct Access Switch, ②.
16. S16 ......Up switch.
17. S17 ......MW switch.
18. S18 ......Direct switch.
19. S19 ......Time set switch.
20. S20 ......Direct Access Switch, ⑨.
21. S21 ......Direct Access Switch, ⑤.
22. S22 ......Direct Access Switch, ①.
23. S23 ......Fast switch.
24. S24 ......FM switch.
25. S25 ......Cancel switch.
26. S26 ......Direct Access Switch, ⑧.
27. S27 ......Direct Access Switch, ④.
28. S28 ......Direct Access Switch, ⓪.
29. S29 ......SW switch.
30. S30 ......Display switch.
31. S31 ......Light switch.
32. S32 ......Voltage selector.
33. S33 ......AC/DC switch.
34. DC voltage measurement are taken with electronics voltmeter from negative terminal of battery. < >......FM, ( )......AM [ ]...SW.
35. Battery current: No signal ....90mA Maximum output 390mA
36. VR1 ......Tone control VR. VR2 ......Volume control VR. VR3 ......LSI VDD adjustment VR.
37. Important safety notice Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

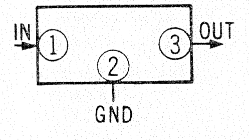
IC1 RVILA1210


AM IF IN
AM IF BIAS
FM/ AM S METER
AM GND
AM AGC IN
AM IF BY PASS
AM Vcc
AM IF OUT
16 15 14 13 12 11 10 9
S
S
AM IF
VOL REG
VOL REG
FM IF
FM DET
1 2 3 4 5 6 7 8
FM IF IN
FM IF BY PASS
FM IF BIAS
FM GND
FM DET BIAS
FM QUAD IN
FM Vcc
FM DET OUT

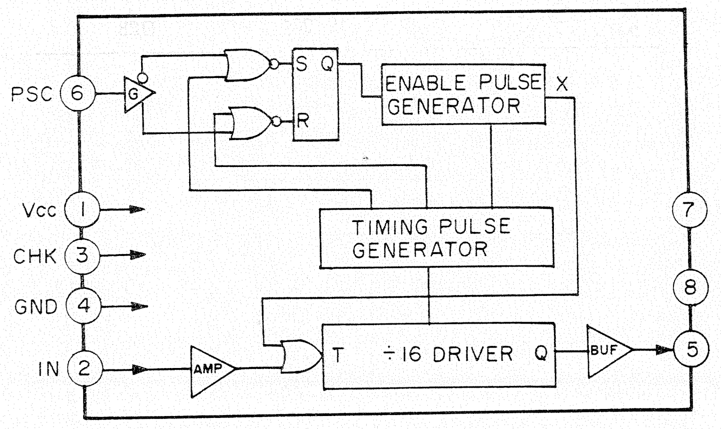
IC2 RVIUPC1212C

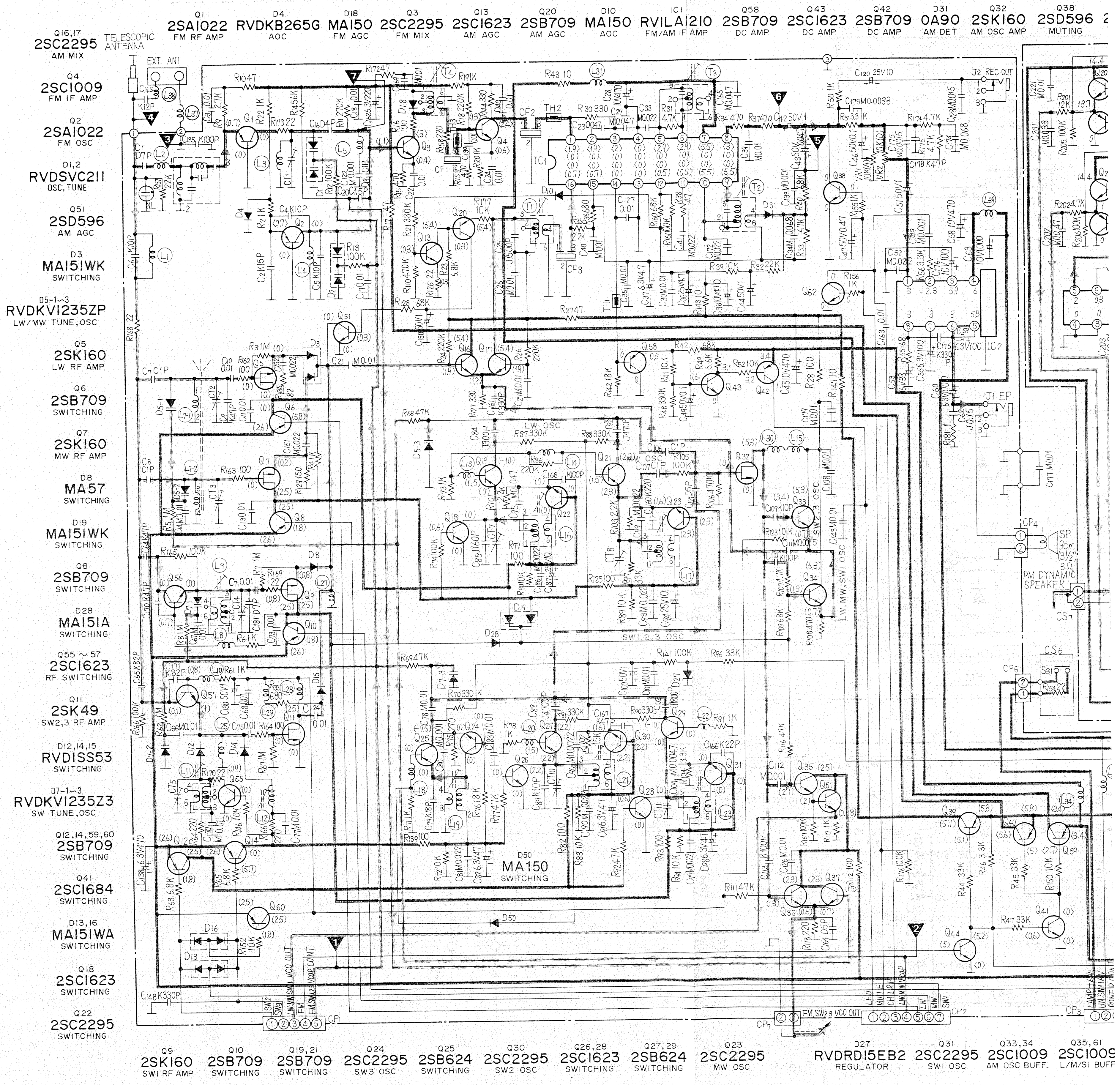

FILTER
4 Vcc
IN PUT 1
PRE AMP
POWER AMP
6 OUT PUT
MUTING
NF

IC3, 4 RVIBA707


IN 1
2 GND
3 OUT

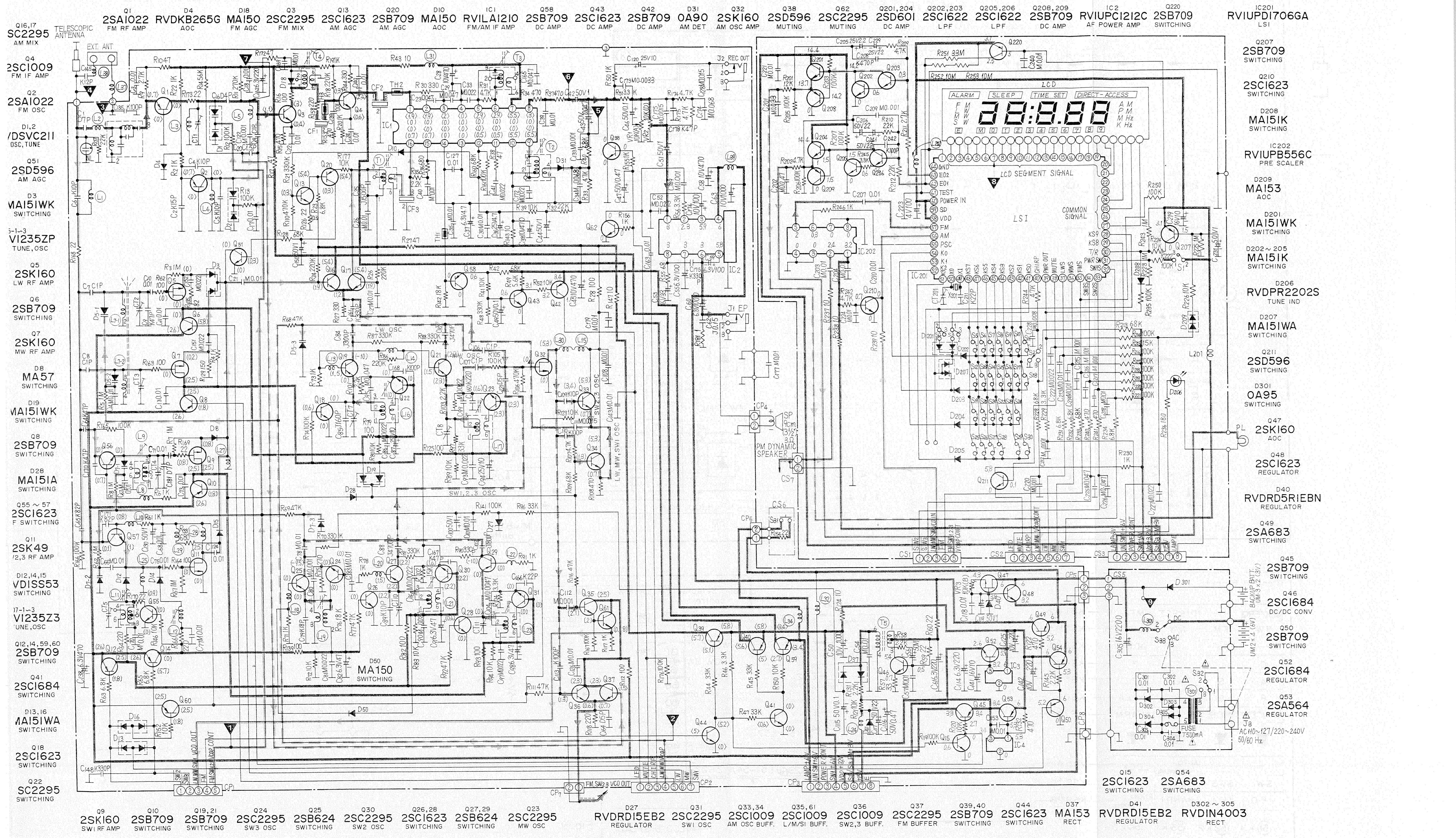
IC202 RVIUPB556C


PSC 6
G
S Q
R
ENABLE PULSE GENERATOR
X
Vcc 1
CHK 3
GND 4
IN 2
TIMING PULSE GENERATOR
7
8
AMP
T ÷16 DRIVER Q
BUF
5


Q1 2SA1022 FM RF AMP
D4 RVDKB265G AOC
D18 MA150 FM AGC
Q3 2SC2295 FM MIX
Q13 2SC1623 AM AGC
Q20 2SB709 AM AGC
D10 MA150 AOC
IC1 RVILA1210 FM/AM IF AMP
Q58 2SB709 DC AMP
Q43 2SC1623 DC AMP
Q42 2SB709 DC AMP
D31 0A90 AM DET
Q32 2SK160 AM OSC AMP
Q38 2SD596 MUTING
Q16,17 2SC2295 AM MIX
TELESCOPIC ANTENNA
EXT. ANT
Q4 2SC1009 FM IF AMP
Q2 2SA1022 FM OSC
D1,2 RVDSVC211 OSC, TUNE
Q51 2SD596 AM AGC
D3 MA151WK SWITCHING
D5-1~3 RVDKV1235ZP LW/MW TUNE, OSC
Q5 2SK160 LW RF AMP
Q6 2SB709 SWITCHING
Q7 2SK160 MW RF AMP
D8 MA57 SWITCHING
D19 MA151WK SWITCHING
Q8 2SB709 SWITCHING
D28 MA151A SWITCHING
Q55 ~ 57 2SC1623 RF SWITCHING
Q11 2SK49 SW2,3 RF AMP
D12,14,15 RVDISS53 SWITCHING
D7-1~3 RVDKV1235Z3 SW TUNE, OSC
Q12,14,59,60 2SB709 SWITCHING
Q41 2SC1684 SWITCHING
D13,16 MA151WA SWITCHING
Q18 2SC1623 SWITCHING
Q22 2SC2295 SWITCHING
D50 MA150 SWITCHING
J2 REC OUT
J1 EP
SP 9cm 3.2Ω PM DYNAMIC SPEAKER
LW OSC
SW1, 2, 3 OSC
LW, MW, SW1 OSC
CP1
CP2
CP3
CP7
FM, SW2,3 VCO OUT
Q9 2SK160 SW1 RF AMP
Q10 2SB709 SWITCHING
Q19,21 2SB709 SWITCHING
Q24 2SC2295 SW3 OSC
Q25 2SB624 SWITCHING
Q30 2SC2295 SW2 OSC
Q26,28 2SC1623 SWITCHING
Q27,29 2SB624 SWITCHING
Q23 2SC2295 MW OSC
D27 RVDRD15EB2 REGULATOR
Q31 2SC2295 SW1 OSC
Q33,34 2SC1009 AM OSC BUFF.
Q35,61 2SC1009 L/M/S1 BUFF

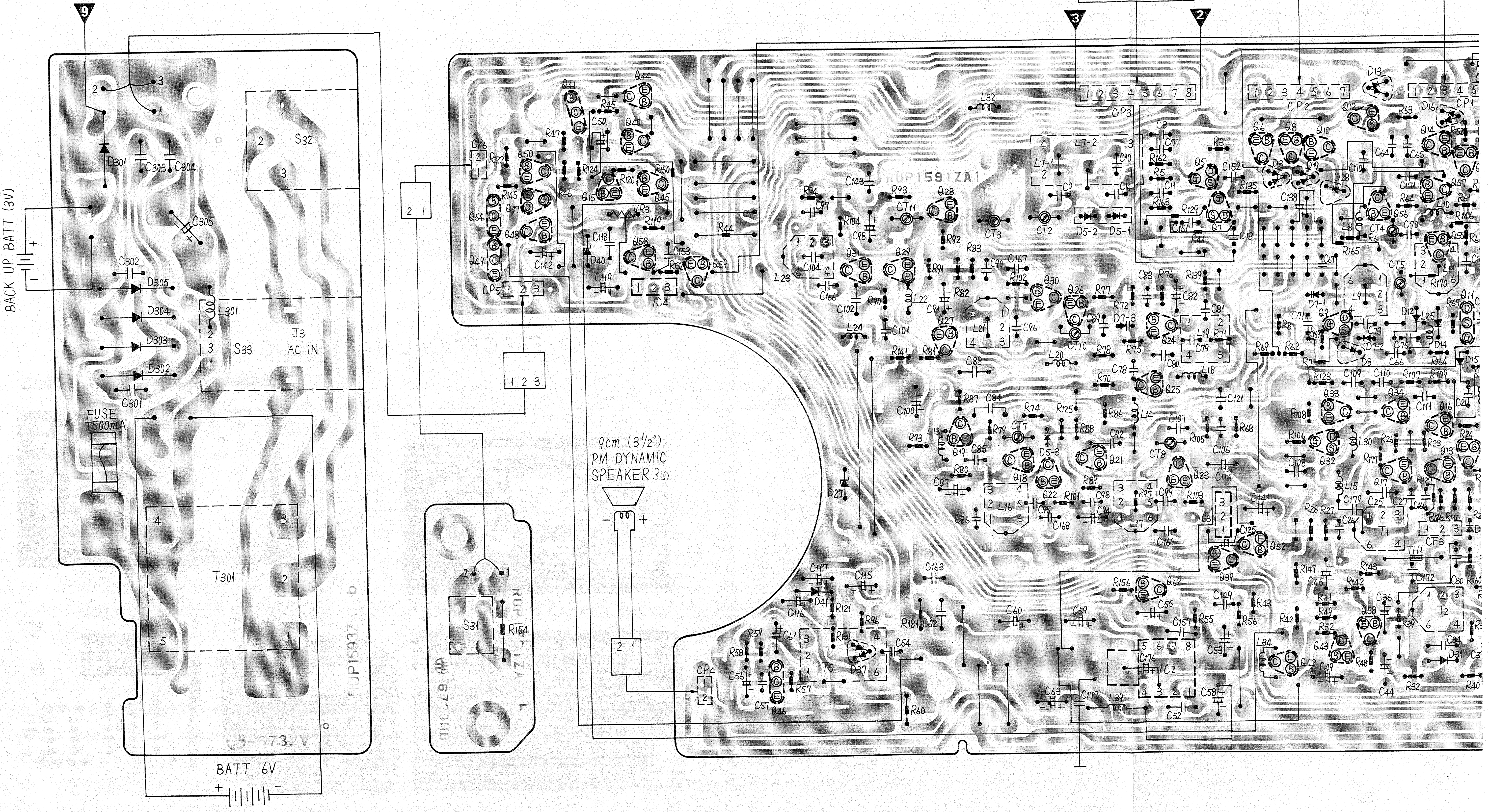
▨▨▶AM OSC, ⇨ LW, MW, SW1 Vcap Out, ➡FM, SW2, 3 Vcap Out, ▬ +Voltage Line,

SCHEMATIC DIAGRAM MODEL RF-799LBS

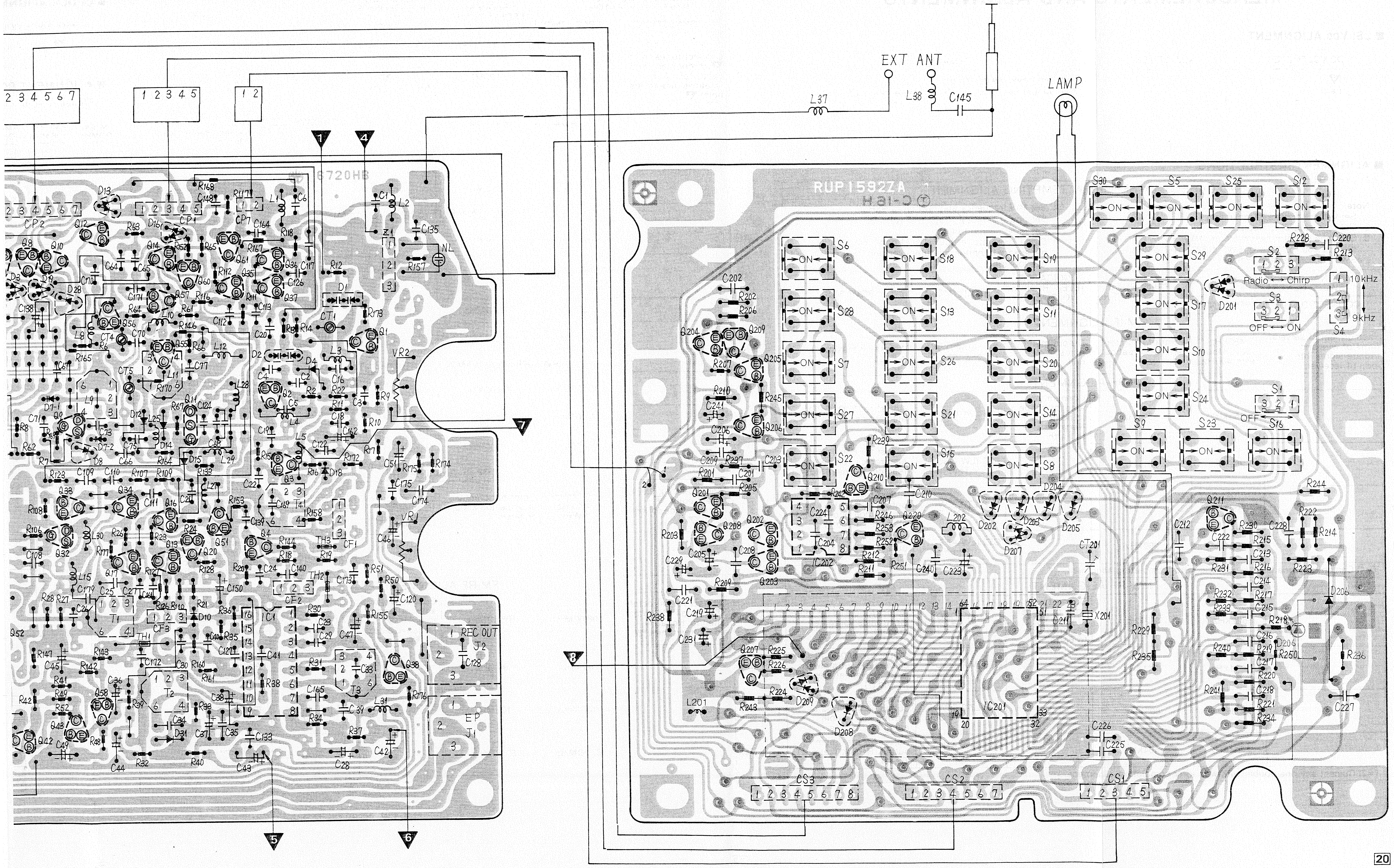

Q1 2SA1022 FM RF AMP
D4 RVDKB265G AOC
D18 MA150 FM AGC
Q3 2SC2295 FM MIX
Q13 2SC1623 AM AGC
Q20 2SB709 AM AGC
D10 MA150 AOC
IC1 RVILA1210 FM/AM IF AMP
Q58 2SB709 DC AMP
Q43 2SC1623 DC AMP
Q42 2SB709 DC AMP
D31 OA90 AM DET
Q32 2SK160 AM OSC AMP
Q38 2SD596 MUTING
Q62 2SC2295 MUTING
Q201,204 2SD601 DC AMP
Q202,203 2SC1622 LPF
Q205,206 2SC1622 LPF
Q208,209 2SB709 DC AMP
IC2 RVIUPC1212C AF POWER AMP
Q220 2SB709 SWITCHING
IC201 RVIUPD1706GA LSI
Q16,17 SC2295 AM MIX
TELESCOPIC ANTENNA
Q4 2SC1009 FM IF AMP
Q2 2SA1022 FM OSC
D1,2 /DSVC211 OSC,TUNE
Q51 2SD596 AM AGC
D3 MA151WK SWITCHING
5-1-3 VI235ZP TUNE,OSC
Q5 2SK160 LW RF AMP
Q6 2SB709 SWITCHING
Q7 2SK160 MW RF AMP
D8 MA57 SWITCHING
D19 MA151WK SWITCHING
Q8 2SB709 SWITCHING
D28 MA151A SWITCHING
Q55 ~ 57 2SC1623 F SWITCHING
Q11 2SK49 2,3 RF AMP
D12,14,15 VDISS53 SWITCHING
7-1-3 VI235Z3 UNE,OSC
Q12,14,59,60 2SB709 SWITCHING
Q41 2SC1684 SWITCHING
D13,16 MA151WA SWITCHING
Q18 2SC1623 SWITCHING
Q22 SC2295 SWITCHING
Q207 2SB709 SWITCHING
Q210 2SC1623 SWITCHING
D208 MA151K SWITCHING
IC202 RVIUPB556C PRE SCALER
D209 MA153 AOC
D201 MA151WK SWITCHING
D202 ~ 205 MA151K SWITCHING
D206 RVDPR2202S TUNE IND
D207 MA151WA SWITCHING
Q211 2SD596 SWITCHING
D301 OA95 SWITCHING
Q47 2SK160 AOC
Q48 2SC1623 REGULATOR
D40 RVDRD5RIEBN REGULATOR
Q49 2SA683 SWITCHING
Q45 2SB709 SWITCHING
Q46 2SC1684 DC/DC CONV
Q50 2SB709 SWITCHING
Q52 2SC1684 REGULATOR
Q53 2SA564 REGULATOR
Q15 2SC1623 SWITCHING
Q54 2SA683 SWITCHING
Q9 2SK160 SW1 RF AMP
Q10 2SB709 SWITCHING
Q19,21 2SB709 SWITCHING
Q24 2SC2295 SW3 OSC
Q25 2SB624 SWITCHING
Q30 2SC2295 SW2 OSC
Q26,28 2SC1623 SWITCHING
Q27,29 2SB624 SWITCHING
Q23 2SC2295 MW OSC
D27 RVDRD15EB2 REGULATOR
Q31 2SC2295 SW1 OSC
Q33,34 2SC1009 AM OSC BUFF.
Q35,61 2SC1009 L/M/S1 BUFF.
Q36 2SC1009 SW2,3 BUFF.
Q37 2SC2295 FM BUFFER
Q39,40 2SB709 SWITCHING
Q44 2SC1623 SWITCHING
D37 MA153 RECT
D41 RVDRD15EB2 REGULATOR
D302 ~ 305 RVD1N4003 RECT
D50 MA150 SWITCHING
EXT. ANT
LCD
ALARM
SLEEP
TIME SET
DIRECT-ACCESS
LCD SEGMENT SIGNAL
COMMON SIGNAL
LSI
PM DYNAMIC SPEAKER
J1 EP
J2 REC OUT
BACKUP BATT.
AC110~127/220~240V 50/60 Hz
FUSE T500mA

▩▩▶ AM OSC, ▨▶ LW, MW, SW1 Vcap Out, ▬▶ FM, SW2, 3 Vcap Out, ▬ + Voltage Line, ▬▶ FM Signal, ▨▶ AM Signal, ▩▩▶ FM OSC Signal, ▨▶ FM, SW1, 2, 3 Vcap In, ▩▩▶ LW, MW Vcap In.

CIRCUIT BOARD AND WIRING CONNECTION


9
3
2
BACK UP BATT (3V)
FUSE T500mA
D301
C303
C304
C305
C302
D305
D304
D303
D302
C301
L301
S32
S33
J3 AC IN
T301
RUP1593ZA b
-6732V
BATT 6V
S31
R154
RUP1591ZA b
6720HB
9cm (3½") PM DYNAMIC SPEAKER 3Ω
CP6
CP5
CP4
CP3
CP2
CP1
IC4
IC3
IC2
RUP1591ZA1
T5
T1
T2
CF3
TH1
D27
D37
L23
L24
L22
L21
L20
L16
L17
L18
L19
L14
L13
L15
L30
L32
L39
L84
L7-1
L7-2
D5-2
D5-1
D5-3
CT1
CT2
CT3
CT4
CT5
CT7
CT8
CT10
CT11
D13
D16
D28
D12
D14
D15
D31
D40
D41
D7-1
D7-2
D7-3
D8
D9
D3
VR3

NG CONNECTION DIAGRAM MODEL RF-799LBS


TELESCOPIC ANTENNA
EXT ANT
LAMP
L37
L38
C145
6720HB
RUP1592ZA
CP2
CP1
CP7
NL
REC OUT
J2
EP
J1
IC1
IC201
IC202
CS3
CS2
CS1
X201
VR1
VR2
CF1
CF2
CF3
T1
T2
T3
T4
TH1
TH2
TH3
Radio ↔ Chirp
OFF ↔ ON
10kHz
9kHz
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
S15
S16
S17
S18
S19
S20
S21
S22
S23
S24
S25
S26
S27
S28
S29
S30
ON
1
4
5
6
7
8

MEASUREMENTS AND ALIGNMENTS

■ LSI VDD ALIGNMENT

DC VOLTMETER	ADJUSTMENT	REMARKS
▼9 ....(+) Earth.........(−)	VR3	1. Set power switch to off. 2. Adjust for 3.2~3.23V DC voltmeter reading.

■ ALIGNMENT INSTRUCTIONS

READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Note:

1. Set volume control to maximum.
2. Set tone control to treble.
3. Set band selector switch to LW, MW, SW or FM. (SW1: 2.300~5.175MHz, SW2: 5.820~12.215MHz, SW3: 15.100~26.100MHz)
4. Set MW frequency step switch to 9kHz.
5. Set power source voltage to 6 volts DC.
6. Set radio switch to ON.
7. Signal generator output should be set no high than necessary to obtain an output reading, to preven overlooking.

BACK UP BATT (3V)

	SIGNAL GENERATOR or SWEEP GENERATOR		FREQUENCY DISPLAY SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
	AM-IF ALIGNMENT					
(1)	Fashion loof of serveral turns of wire and radiate signal into loop of receiver.	450kHz 30% Mod. with 400Hz.	Point of noninterference. (on/about (600kHz).	Output meter across Voice coil.	T1 (1st IFT) T2 (2nd IFT)	Adjust for maximum output.
	LW-RF ALIGNMENT					
(2)	〃	153kHz	153kHz	Connect vert. amp. of scope to point ▼2. Negative side to Earth.	L16 (LW OSC Coil)	Adjust for 2.00±0.05V electronics voltmeter reading.
(3)	〃	281kHz	281kHz	〃	CT7 (LW OSC Trimmer)	Adjust for 6.9~7.05V electronics voltmeter reading. Repeat steps (2) and (3).
(4)	〃	160kHz	160kHz	〃	(∗1) L7-1 (LW ANT Coil)	Adjust for maximum output. Adjust L7-1 by moving coil bobbin along ferrite core.
(5)	〃	260kHz	260kHz	〃	CT2 (LW ANT Trimmer)	Adjust for maximum output. Repeat steps (2)~(5).
	(∗1) Cement antenna bobbin with wax after completing alignment.					
	MW-RF ALIGNMENT					
(6)	〃	522kHz	522kHz	Connect vert. amp. of scope to point ▼2. Negative side to Earth.	L17 (MW OSC Coil)	Adjust for 0.91V (or more) electronics voltmeter reading.
(7)	〃	1611kHz	1611kHz	〃	CT8 (MW OSC Trimmer)	Adjust for 8.00±0.10V electronics voltmeter reading. Repeat steps (6) and (7).
(8)	〃	603kHz	603kHz	〃	(∗2) L7-2 (MW ANT Coil)	Adjust for maximum output. Adjust L7-2 by moving coil bobbin along ferrite core.
(9)	〃	1404kHz	1404kHz	〃	CT3 (MW ANT Trimmer)	Adjust for maximum output. Repeat steps (6)~(9).
	(∗2) Cement antenna bobbin with wax after completing alignment.					
	SIGNAL GENERATOR or SWEEP GENERATOR		FREQUENCY DISPLAY SETTING	INDICATOR (ELECTRONICS VOLTMETER or SCOPE)	ADJUSTMENT	REMARKS
	CONNECTIONS	FREQUENCY				
	SW1-RF ALIGNMENT (2.300~5.175MHz)					
(10)	Connect to test point ▼4 through ceramic capacitor (10pF). Negative side to test point ▼3.	2.300MHz	2.300MHz	Connect vert. amp. of scope to point ▼1. Negative side to earth.	L23 (SW1 OSC Coil)	Adjust for 1.50±0.05V electronics voltmeter reading.
(11)	〃	5.175MHz	5.175MHz	〃	CT11 (SW1 OSC Trimmer)	Adjust for 8.00±0.10V electronics voltmeter reading. Repeat steps (10) and (11).
(12)	〃	2.300MHz	2.300MHz	〃	L9 (SW1 ANT Coil)	Adjust for maximum output.
(13)	〃	5.175MHz	5.175MHz	〃	CT4 (SW1 ANT Trimmer)	Adjust for maximum output. Repeat steps (10)~(13).
	SW2-RF ALIGNMENT (5.820~12.215MHz)					
(14)	〃	5.820MHz	5.820MHz	〃	L21 (SW2 OSC Coil)	Adjust for 1.50±0.05V electronics voltmeter reading.
(15)	〃	12.215MHz	12.215MHz	〃	CT10 (SW2 OSC Trimmer)	Adjust for 8.00±0.10V electronics voltmeter reading. Repeat steps (14) and (15).
(16)	〃	5.820MHz	5.820MHz	〃	L11 (SW2 ANT Coil)	Adjust for maximum output.
(17)	〃	12.215MHz	12.215MHz	〃	CT5 (SW2 ANT Trimmer)	Adjust for maximum output. Repeat steps (14)~(17).
	SW3-RF ALIGNMENT (15.100~26.100MHz)					
(18)	〃	26.100MHz	26.100MHz	〃	L19 (SW3 OSC Coil)	Adjust for 8.00±0.05V electronics voltmeter reading.
(19)	〃	15.100MHz	15.100MHz	〃	L12 (SW3 ANT Coil)	Adjust for maximum output.
(20)	〃	15.100MHz	15.100MHz	〃	——	Confirm that electronics voltmeter reading should be 2.50~3.50V.
	FM-IF ALIGNMENT					
(21)	High side thru. 0.001μF to test point ▼7, Negative side to test point ▼3.	10.7MHz (400kHz SWP)	Point of noninterference. (on/about 90MHz).	Connect vert. amp. of scope to point ▼6. Negative side to earth.	T3 (FM 1st IFT)	Adjust for maximum amplitude and proper linearity between ±100kHz markers. (Refer to fig. 12).
(22)	〃	〃	〃	〃	T4 (FM 2nd IFT)	Adjust T4 so that 10.7MHz marker appears at the center. (Refer to fig. 13).
	FM-RF ALIGNMENT					
(23)	Connect to test point ▼4 through FM dummy antenna. Negative side to test point ▼3.	108.00MHz	108.00MHz	Connect vert. amp. of scope to point ▼1. Negative side to ▼3.	L4 (FM OSC Coil)	Adjust for 8.00± 0.05V electronics voltmeter reading.
(24)	〃	90MHz	90MHz	〃	L3 (FM ANT Coil)	Adjust for maximum output.
(25)	〃	106MHz	106MHz	〃	CT1 (FM ANT Trimmer)	Adjust for maximum output. Repeat steps (23)~(25).
(26)	〃	87.50MHz	87.50MHz	〃	——	Confirm that electronics voltmeter reading should be more than 1.00V.

■ CLOCK ALIGNMENT

FREQUENCY COUNTER	ADJUSTMENT	REMARKS
8 ....(+) Earth.........(−)	CT201	Adjust for 29999.97~30000.06μsec reading on frequency counter.

■ ALIGNMENT POINTS

Please refer to circuit board and wiring Connection Diagram in which test point are located.

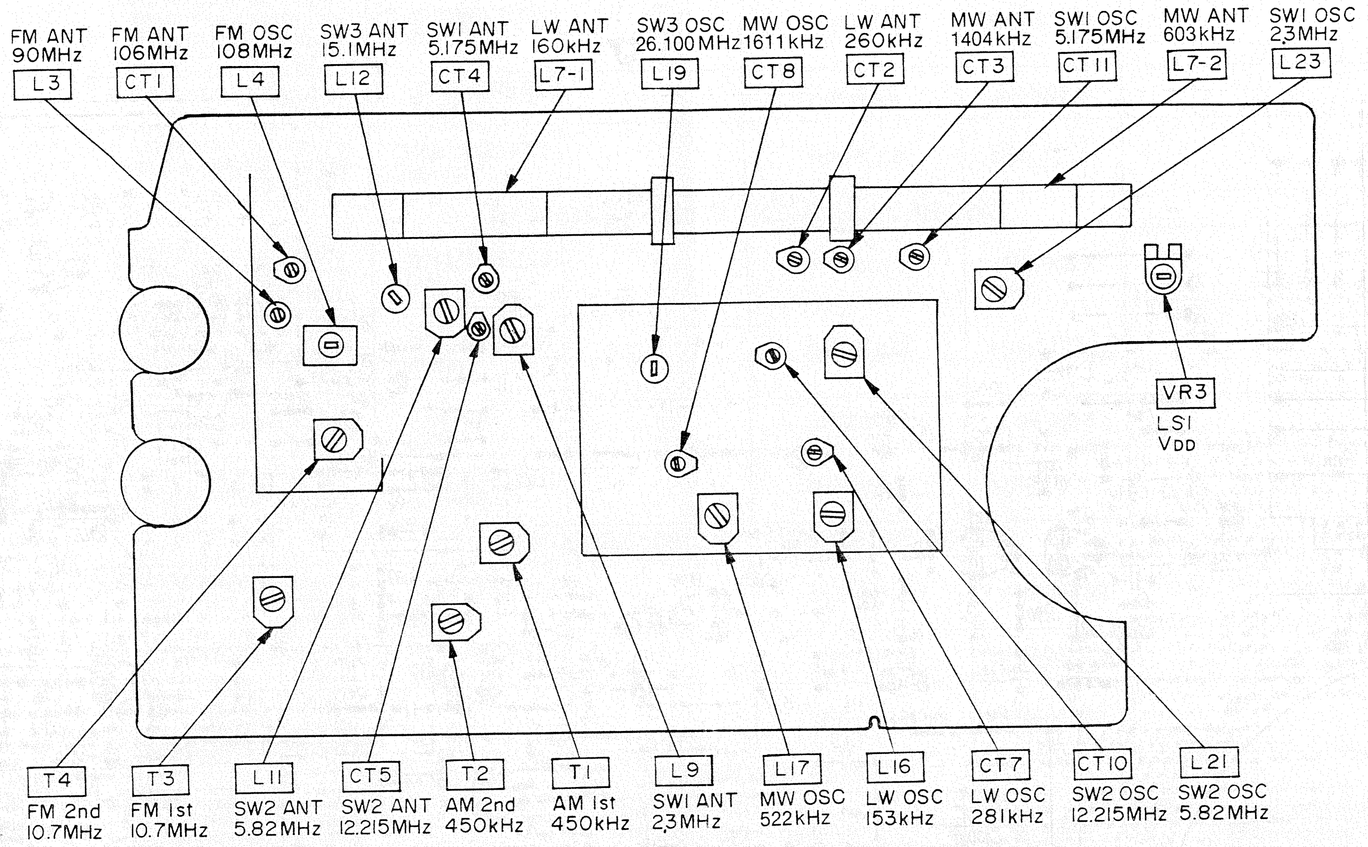

FM ANT 90MHz L3
FM ANT 106MHz CT1
FM OSC 108MHz L4
SW3 ANT 15.1MHz L12
SW1 ANT 5.175MHz CT4
LW ANT 160kHz L7-1
SW3 OSC 26.100MHz L19
MW OSC 1611kHz CT8
LW ANT 260kHz CT2
MW ANT 1404kHz CT3
SW1 OSC 5.175MHz CT11
MW ANT 603kHz L7-2
SW1 OSC 2.3MHz L23
VR3
LS1
VDD
T4 FM 2nd 10.7MHz
T3 FM 1st 10.7MHz
L11 SW2 ANT 5.82MHz
CT5 SW2 ANT 12.215MHz
T2 AM 2nd 450kHz
T1 AM 1st 450kHz
L9 SW1 ANT 2.3MHz
L17 MW OSC 522kHz
L16 LW OSC 153kHz
CT7 LW OSC 281kHz
CT10 SW2 OSC 12.215MHz
L21 SW2 OSC 5.82MHz

Fig. 10

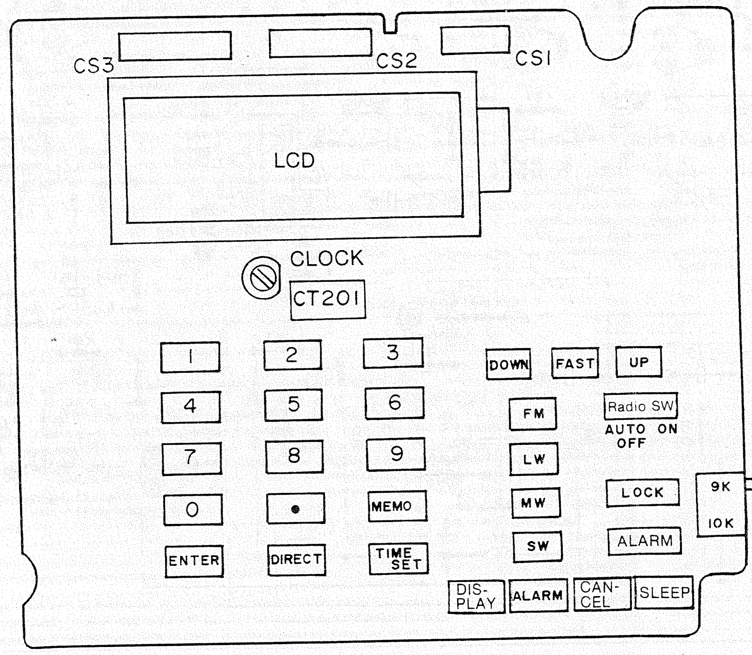

CS3
CS2
CS1
LCD
CLOCK
CT201
1
2
3
4
5
6
7
8
9
0
•
MEMO
ENTER
DIRECT
TIME SET
DOWN
FAST
UP
FM
Radio SW
AUTO ON
OFF
LW
MW
LOCK
9K
10K
SW
ALARM
DIS-PLAY
ALARM
CAN-CEL
SLEEP

Fig. 11

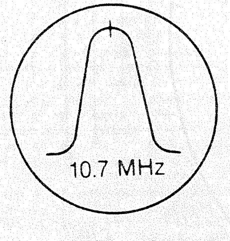


Fig. 12

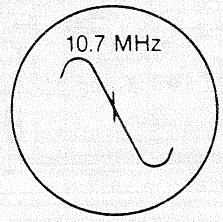


Fig. 13

CABINET PARTS LOCATION

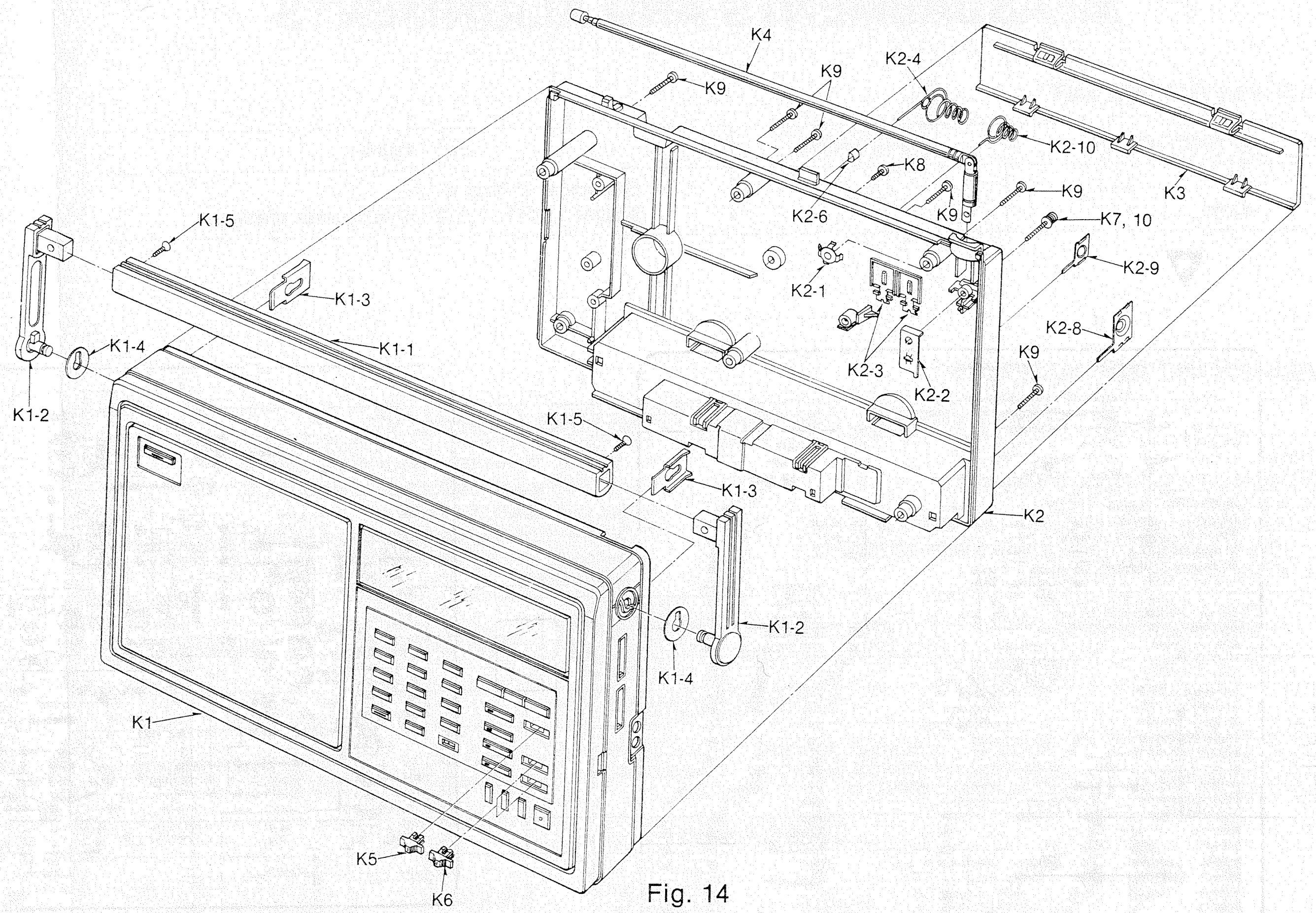

K4
K9
K2-4
K9
K8
K2-10
K2-6
K9
K9
K3
K7, 10
K2-1
K2-9
K1-5
K1-3
K2-8
K9
K2-3
K2-2
K1-4
K1-1
K1-2
K1-5
K1-3
K2
K1-2
K1-4
K1
K5
K6

Fig. 14

ELECTRICAL PARTS LOCATION

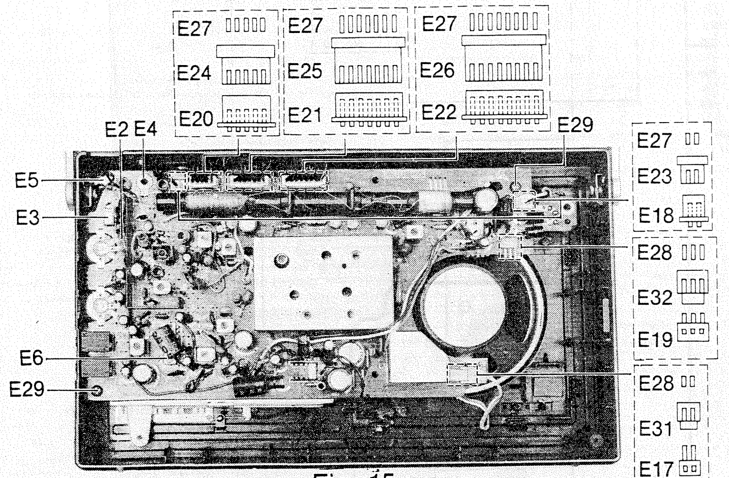

E27
E27
E27
E24
E25
E26
E20
E21
E22
E2 E4
E29
E5
E3
E6
E29
E27
E23
E18
E28
E32
E19
E28
E31
E17

Fig. 15

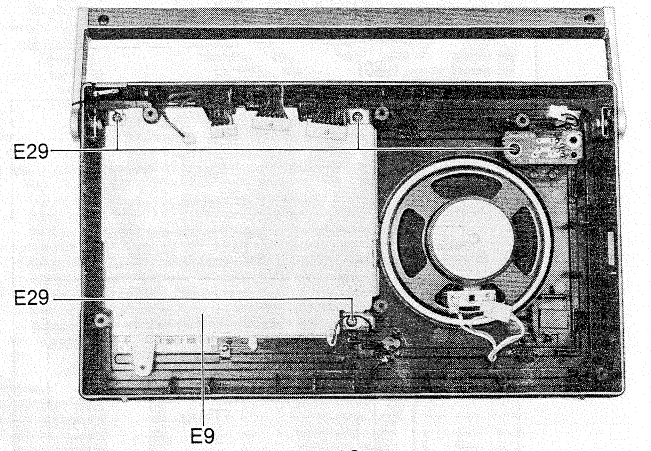


Fig. 16

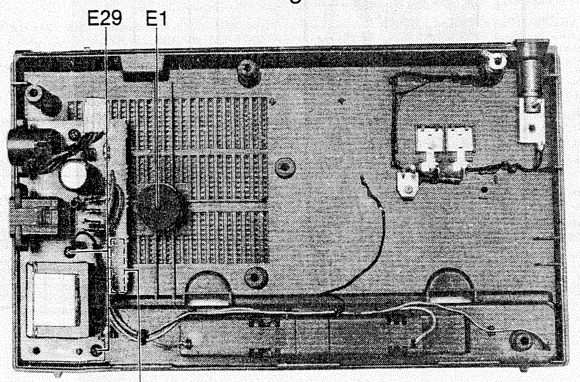

E29 E1
E36, 37

Fig. 17

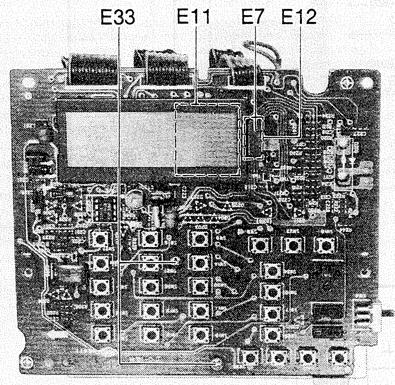

E33
E11
E7
E12

Fig. 18

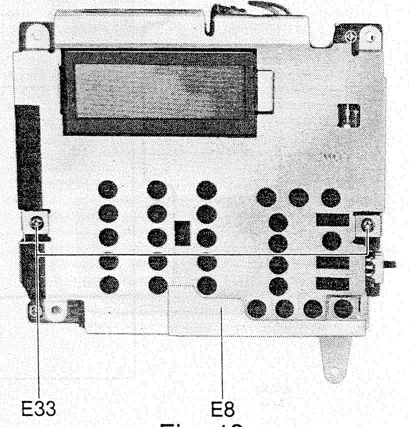


Fig. 19

■ REPLACEMENT PARTS LIST ....Model RF-799LBS

(RD83025316C2)

NOTES: 1. Important safety notice.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
2. The S mark indicates service standard parts and may differ from production parts.

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
		INTEGRATED CIRCUITS, TRANSISTORS AND DIODES		
IC1	RVILA1210	IC	1	
IC2	RVIUPC1212C	IC	1	
IC3,4	RVIBA707	IC	2	
IC201	RVIUPD1706GA	IC	1	
IC202	RVIUPB556C	IC	1	
Q1	2SA1022B	Transistor (Ge)	1	
Q2	2SA1022C	Transistor (Ge)	1	
Q3,24,37	2SC2295C	Transistor (Si)	3	
Q4,33∿36,61	2SC1009F4	Transistor (Si)	6	
Q5,7,9	2SK160K5	Transistor (Si)	3	
Q6,8,10,19,21,42,207	2SB709Q	Transistor (Ge)	7	
Q11	2SK49F2	Transistor (Si)	1	
Q12,14,20,39,40,45,50,58∿60,208,209,220	2SB709R	Transistor (Ge)	13	
Q13,15,18,26,28,55∿57	2SC1623L5A	Transistor (Si)	8	
Q16,17,22,23,30,31,62	2SC2295B	Transistor (Si)	7	
Q25,27,29	2SB624BV3	Transistor (Ge)	3	
Q32,47	2SK160K4	Transistor (Si)	2	
Q38,51,211	2SD596DV3	Transistor (Si)	3	
Q41,52,46	2SC1685-Q	Transistor (Si)	3	S
Q43,44,48,210	2SC1623L6A	Transistor (Si)	4	
Q49,54	2SA683NCR	Transistor (Ge)	2	
Q53	2SA722-S	Transistor (Ge)	1	S
Q201,204	2SD601R	Transistor (Si)	2	
Q202,203,205,206	2SC1622AD17	Transistor (Si)	4	
D1,2	RVDSVC211	Diode (Si)	2	
D3,19,201	MA151WK	Diode (Si)	3	
D4	RVDKB265G	Diode (Si)	1	S
D5	RVDKV1235Z2	Diode (Si)	1	
D7	RVDKV1235Z3	Diode (Si)	1	
D8	MA57	Diode (Si)	1	
D10,18,50	MA161	Diode (Si)	3	S
D12,14,15	RVD1SS53	Diode (Si)	3	

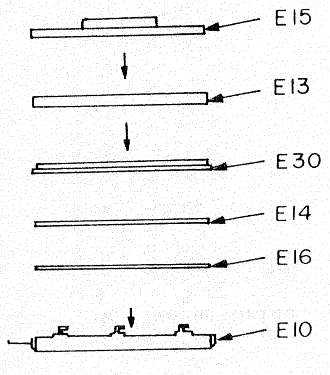


Fig. 20

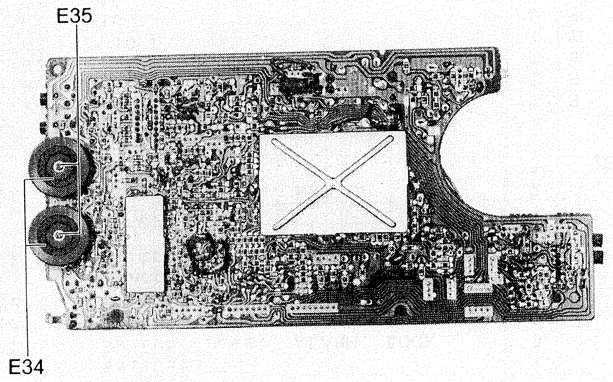


Fig. 21

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
D13,16,207	MA151WA	Diode (Si)	3	
D27,41	RVDRD15EB2	Diode (Si)	2	
D28	MA151A	Diode (Si)	1	
D31	2OA90	Diode (Si)	1	S
D37,209	MA153	Diode (Si)	2	
D40	RVDRD5R1EBN	Diode (Si)	1	
D202∿205,208	MA151K	Diode (Si)	4	
D206	RVDPR2202S	Diode (Si)	1	
D301	OA95	Diode (Si)	1	S
D302∿305	RVD1N4003LF	Diode (Si)	4	
		THERMISTORS		
TH1	RRT103	Thermistor	1	
TH2,3	RRT251	Thermistor	2	
		CRYSTAL		
X201	RVCQ150NZN	Crystal	1	
		COILS AND TRANSFORMERS		
L3	RLO4N113	Coil, FM Antenna	1	
L4	RLO4N149	Coil, FM Oscillator	1	
L7	RLF6F24	Coil, LW, MW Antenna	1	
L8	RLQZ102	Coil, Choke	1	
L9	RLO3M16	Coil, SW, Antenna	1	
L10,15,20,22,24,25,27,34,201,202	RLQZG102K	Coil, Choke	10	
L11	RLO3M24	Coil, SW2 Antenna	1	
L12	RLA3N13	Coil, SW3 Antenna	1	
L13	RLM1X1	Coil, Choke	1	
L14	RLQZD332J	Coil, Choke	1	
L16	RLO1M11	Coil, LW Oscillator	1	
L17	RLO2M31	Coil, MW Oscillator	1	
L18,28	RLQZB470K	Coil, Choke	2	
L19	RLO4N146	Coil, SW Oscillator	1	
L21	RLO3M82	Coil, SW2 Oscillator	1	
L23	RLO3M81	Coil, SW1 Oscillator	1	
L29,30	RLQZB101K	Coil, Choke	2	
L31,32	RLQZ1001	Coil, Choke	2	
T1	RLI2M214	AM IFT	1	S
T2	RLI2M402	AM IFT	1	S
T3,4	RLI4M101	FM IFT	2	S
T5	RLT9E5A	DC/DC Converter	1	
T301	RLT5I2Z1B	Power Transformer	1	⚠
		VARIABLE RESISTORS		
VR1	RVV1C1A14	Variable Resistor, 10kΩ (A)	1	
VR2	RVV1C3D14	Variable Resistor, 10kΩ (D)	1	
VR3	EVNM4AA00B24	Variable Resistor, 20kΩ (B)	1	S
		VARIABLE CAPACITORS		
CT1,3,8,10,11	RCVTZ20F	Trimmer Capacitor	5	
CT2,201	RCVTZ30F	Trimmer Capacitor	2	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
CT4,5	RCVCTZ3120	Trimmer Capacitor	2	
CT7	RCVTZ60F	Trimmer Capacitor	1	
		CERAMIC FILTERS		
CF1,2	RVF107NAR	Ceramic Filter	2	
CF3	RVFCFM2450B	Ceramic Filter	1	
		COMPONENT COMBINATION		
Z1	RXABPWB5W	Component Combination	1	
		SPEAKER		
	RAS9P13Z	Speaker, 9cm (3-1/2")	1	
		SWITCHES		
S1∿3	RSS2A16Z	Switch, Power, ALARM, LOCK	3	
S4	RSS2A25Z	Switch, MW Step	1	
S5∿31	RSH1A28Z	Switch, ALARM, ENTER, Direct-Access & etc	27	
S32	RSR2A07Z	Switch, Voltage Selector	1	
		JACKS		
J1,2	QJA0172A	Jack, Rec Out. EXT SP	2	
J3	RJJ2A4Z	Jack, AC IN	1	⚠
		RESISTORS (Value is in OHMS)		
R154	ERD25FJ220	22 1/4W Carbon	1	S
R181	ERD25FJ1R0	1 " "	1	S
R4	ERD25FJ102	1 k " "	1	S
R150	ERD25FJ103	10 k " "	1	S
R165,166	ERD25TJ104	100 k " "	2	S
R129	ERD25FJ151	150 " "	1	S
R168,170	ERD25FJ220	22 " "	2	S
R44	ERD25FJ333	33 k " "	1	S
R146	ERD25FJ103	10 k " "	1	S
R167	ERD25TJ104	100 k " "	1	S
R7	ERD25TJ105	1 M " "	1	S
R127	ERD25FJ331	330 " "	1	S
R56	ERD25FJ332	3.3 k " "	1	S
R153	ERD25FJ471	470 " "	1	S
R124	ERG1ANJ100	10 1W Metal Oxide	1	S
R60	ERG1ANJ220	22 " "	1	S
R16,28,79,82,93,112,125,139,162∿164	RRD18XJ101	100 1/8W Chip	11	
R2,6,19,20,22,50,61,71,73,78,91,117,155,156,230,246	RRD18XJ102	1 k " "	16	
R39,41,52,72,80,83,89,94,120,121,123,152,177,224,226	RRD18XJ103	10 k " "	15	
R201	RRD18XJ123	12 k " "	1	
R218	RRD18XJ223	22 k " "	1	
R135	RRD18XJ820	82 " "	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R12,13,74,105, 119,141,161,176, 203,205∿207,214, 216∿222,235,250	RRD18XJ104	100 k 1/8W Chip	22	
R102	RRD18XJ152	1.5 k " "	1	
R215	RRD18XJ153	15 k " "	1	
R236	RRD18XJ181	180 " "	1	
R76,142,	RRD18XJ183	18 k " "	2	
R126,164,169,173	RRD18XJ220	22 " "	4	
R64,66,118,158	RRD18XJ221	220 " "	4	
R35,58,101,103, 131,145,210,212	RRD18XJ222	2.2 k " "	8	
R32,59,157	RRD18XJ223	22 k " "	3	
R18,24,26,86	RRD18XJ224	220 k " "	4	
R75	RRD18XJ271	270 " "	1	
R9,211	RRD18XJ272	2.7 k " "	2	
R11	RRD18XJ274	270 k " "	1	
R57	RRD18XJ330	33 " "	1	
R30,144	RRD18XJ331	330 " "	2	
R40,46,51,104,229,245	RRD18XJ332	3.3 k " "	6	
R45,47,96,97	RRD18XJ333	33 k " "	4	
R21,48,70, 81,87,88,90	RRD18XJ334	330 k " "	7	
R10,17,27, 38,172	RRD18XJ470	47 " "	5	
R15,34,37,108, 122,132,240,241	RRD18XJ471	470 " "	8	
R31,33,107,174, 175,202,242,209	RRD18XJ472	4.7 k " "	8	
R68,69,77,92, 111,116,244	RRD18XJ473	47 k " "	7	
R106,110	RRD18XJ474	470 k " "	2	
R49	RRD18XJ562	5.6 k " "	1	
R14	RRD18XJ563	56 k " "	1	
R55	RRD18XJ680	68 " "	1	
R36,133	RRD18XJ681	680 " "	2	
R23,63,65 231,232,234	RRD18XJ682	6.8 k " "	6	
R42,109,128, 160,213,228,233	RRD18XJ683	68 k " "	7	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
R251	RRD18XK335	3.3 M 1/8W Chip	1	
R43,143,147,237∿239	RRD18XK100	10 " "	6	
R3,5,8,62,67, 223,225,243	RRD18XK105	1 M " "	8	
R252,253	RRD18XK106	10 M " "	2	
		CAPACITORS (Value is in MICRO FARADS except P.P-PICO FARADS)		
C180	ECCD1H050CC	5 P 50V Ceramic	1	
C157	ECCD1H331K	330 P " "	1	
C145	ECCD1H120KC	12 P " "	1	
C153,177,179	ECKD1H103MD	0.01 " "	3	
C301∿304	ECKD1H103ZF	0.01 " "	4	
C178,208	ECKD1H471KB	470 P " "	2	
C85	ECMS05161J	160 P " Mica	1	
C84	ECQP1301JZ	300 P " Polyester	1	
C25	RCQP2A152JZ	1500 P 100V "	1	
C102	RCQP2A182JZ	1800 P " "	1	
C92	RCQP2A471JZ	470 P " "	1	
C88	RCQP2A472JZ	4700 P " "	1	
C62	ECQV05154JZ	0.15 50V "	1	
C78	ECFT1E103MD	0.01 25V Semi-conductor	1	
C43	ECFT1E473MD	0.047 " "	1	
C174,34	ECFT1E683MD	0.068 " "	2	
C206,241	ECEA50M2R2R	2.2 50V Electrolytic	2	S
C201	ECUX1E333MD	0.033 25V Chip	1	
C23,29,95,165, 202,225,226	ECUX1E473MD	0.047 " "	7	
C7,8,19,106,107	ECUX1H010CC	1 P 50V "	5	
C16	ECUX1H040CC	4 P " "	1	
C121,164	ECUX1H050DC	5 P " "	2	
C1	ECUX1H070DC	7 P " "	1	
C20,132	ECUX1H1R5CC	1.5 P " "	2	
C4∿6,89,109	ECUX1H100KC	10 P " "	5	
C110,113,135,168	ECUX1H101K	100 P " "	4	
C80,112,122,133, 149,209 212,220,228	ECUX1H102MD	0.001 " "	9	
C14,21,26,27,30, 35,39,40,54,57, 66,67,70,77,83, 101,108,126,143, 169,203,204,213∿ 218,221,224,240	ECUX1H103MD	0.01 " "	31	
C2	ECUX1H150KC	15 P " "	1	
C111,175	ECUX1H152MD	0.0015 " "	2	
C181	ECCD1H070DC	7 P " Ceramic	1	
C242	ECCD1H101K	100P " "	1	

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
C3,10,11,13,17,18, 22,24,68,71,73,75, 118,124,127,139, 140,163,207,210	ECUX1H103ZF	0.01 50V Chip	20	
C128	ECUX1H153MD	0.015 " "	1	
C79	ECUX1H180KC	18 P " "	1	
C166,211	ECUX1H220KC	22 P " "	2	
C160	ECUX1H221K	220 P " "	1	
C96	ECUX1H222MD	0.0022 " "	1	
C33,41,52,81,86, 90,93,97,99,151, 152,172,222,227	ECUX1H223MD	0.022 " "	14	
C148,161	ECUX1H331K	330 P " "	2	
C173	ECUX1H332MD	0.0033 " "	1	
C9,64,167,170	ECUX1H470KC	47 P " "	4	
C104	ECUX1H472MD	0.0047 " "	1	
C65,171	ECUX1H820KC	82 P " "	2	
C60	ECEA0JSS102	1000 6.3V Electrolytic	1	
C55,59,176	ECEA1AS101	100 10V "	3	S
C61,114,125,142,162	ECEA1AS221	220 " "	5	S
C53	ECEA1CS330	33 16V "	1	S
C37,82,91,98	ECEA1AS470	47 10V "	4	S
C138	ECEA0JS471	470 6.3V "	1	S
C50,63	ECEA1ASS102	1000 10V "	2	
C28,38,45,58	ECEA1AS471	470 " "	4	S
C87,94,120,141	ECEA1HS100	10 50V "	4	S
C36	ECEA25Z4R7	4.7 25V "	1	S
C47	ECEA50ZR47	0.47 50V "	1	S
C46,49,115	ECEA1HSOR1	0.1 " "	3	
C42,44,51,56,100, 119,130,150	ECEA50Z1	1 " "	8	S
C116	ECEA1JS4R7	4.7 6.3V "	1	S
C305	ECEA1CS222	2200 16V "	1	S
C223	ECEA0GK101	100 4V "	1	
C219	ECEA1CK100	10 16V "	1	
C231	ECEA1HK010	1 50V "	1	
C205,229	ECSF1EE225	2.2 25V "	2	
C117	ECEA1HS2R2	2.2 50V "	1	S
		CABINET PARTS		
K1	RYMF799LBS91	Front Cabinet Ass'y	1	
K1-1	RKX253Z	Handle	1	
K1-2	RKX233Z2	Arm	2	
K1-3	RKT130Z	Stopper, Handle	2	
K1-4	RKX251Y	Washer	2	
K1-5	XTC3+8CFZ	Screw, Handle	2	
K2	RYFF799LBSXG	Rear Cabinet Ass'y	1	
K2-1	RJT514Z	Terminal Earth	1	
K2-2	RJT698Z	Terminal Tel Antenna	1	
K2-3	RJT636Y	Terminal EXT Antenna	2	
K2-4	RJC505Z	Spring, Battery - Side	1	
K2-5	RJR207	Terminal, EXT Antenna	2	
K2-6	RJT398Y	Connecting Pipe, Spring	1	
K2-7	XTN26+8C	Screw, Terminal M'tg	1	
K2-8	RJC205Z	Terminal, Battery + Side	1	
K2-9	RJC314A	Terminal, Battery + Side	1	
K2-10	RJC322Z	Terminal, Battery - Side	1	
K3	RYNF799LBSXG	Battery Cover Ass'y	1	
K4	XEAQCR228FAK	Telescopic Antenna	1	
K5	RBD166Y	Knob Power	1	
K6	RBD166Z	Knob, Lock, Radio, Charp	2	
K7	XSB3+25BNS	Screw, Telescopic Antenna M'tg	1	
K8	XSB3+6BN	Screw, Cabinet	1	
K9	XTB3+20BFN	Screw, Cabinet	6	
K10	XWA3B	Washer, Telescopic Antenna	1	S
		ELECTRICAL PARTS		
E1	RHG473Z	Rubber, Speaker	1	
E2	XANR2T20	Neon Lamp, Arrestor	1	
E3	RJT718Z	Terminal, Telescopic Antenna	1	
E4	RJT757Z	Terminal, Earth	1	
E5	RJT787Z	Terminal	1	
E6	RMC171Y	Shield Cover, IC1	1	
E7	XAMR18T20	Lamp	1	
E8	RME299Z	Cover, LCD Circuit	1	
E9	RME300Z	Cover, LCD Circuit	1	
E10	RMC824Z	Shield Cover, LCD	1	
E11	RMC861Z	Shield Cover, LSI	1	
E12	RHG219Z1	Lamp Holder	1	
E13	RHG5019Z	Conductive Rubber	1	
E14	RHR1177Z	Spacer	1	
E15	RDH191Z	Reflecting Plate	1	
E16	RGP770Z	Polarization Panel, LCD	1	
E17	RJP2G2Z	Plug, 2 Pin (CP4)	1	
E18	RJP2G4Y	Plug, 2 Pin (CP6,7)	2	
E19	RJP3G2Z	Plug, 3 Pin (CP5)	1	
E20	RJP5G4Y	Plug, 5 Pin (CP1)	1	
E21	RJP7G4Y	Plug, 7 Pin (CP2)	1	
E22	RJP8G4Y	Plug, 8 Pin (CP3)	1	
E23	RJS2L3Z	Socket, 2 Pin (CS6,7)	2	
E24	RJS5L3Z	Socket, 5 Pin (CS1)	1	
E25	RJS7L3Z	Socket, 7 Pin (CS2)	1	
E26	RJS8L3Z	Socket, 8 Pin (CS3)	1	
E27	RJT707Z	Terminal Socket	24	
E28	RJT462Z	Terminal Socket	5	
E29	XTV3+10G	Screw, Circuit Board M'tg	9	
E30	EDD073C14C3A	LCD	1	
E31	RJS2L1Z	Socket, 2 Pin (CS4)	1	
E32	RJS3L1Z	Socket, 3 Pin (CS5)	1	
E33	XTV3+6J	Screw, Circuit Board M'tg	4	
E34	RBT150Z	Knob, Volume & Tone	2	
E35	XSN2+W4	Screw, Knob M'tg	2	
E36	XBA2C05TR0	Fuse	1	⚠

Ref. No.	Part No.	Part Name & Description	Per Set	Remarks
E37	QTF1054	Holder, Fuse	2	⚠
		ACCESSORIES		
	XEH1A1P	Earphone	1	S
	RJA20Z	Power Cord, AC	1	⚠
	RQE13Z	Caution Tag	1	
		PACKING MATERIALS		
	XZB40X35A01	Polyethylene	1	S
	RPN9425Z	Pad Complete	1	S
	RPK1538Z	Gift Box	1	
		PRINTED MATERIAL		
	RQX4092Z	Instruction Book	1	

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ORDER NO. RD83025325A2

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Service Manual

Radio

RF-799LBS

FM-LW-MW-SW
PLL SYNTHESIZED RECEIVER

Please use this manual together with the service manual for model No. RF-799LBS, order No. RD83025316C2.

CHANGES

■ SPECIFICATIONS

SW
Antenna: Telescopic, EXT. Antenna
(High Impedance)
FM
Antenna: Telescopic, EXT. Antenna
(75Ω)
General
EXT. Antenna: 75Ω for FM, High Impedance for SW

[Model RF-799LBS (RD83025316C2)]

➡

SW
Antenna: Telescopic
(High Impedance)
FM
Antenna: Telescopic
(75Ω)
General
None

[Model RF-799LBS (RD83025325A2)]

■ REPLACEMENT PARTS LIST

NOTES: Important safety notice.
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.

Ref. No.	Change of Part No.		Description	Per Set	Remarks	Price
	RF-799LBS (RD83025316C2) ➡	RF-799LBS (RD83025325A2)				
L302, 303	——	RLQZZ470	Coil, Choke	2	⚠	
R104	RRD18XJ332	RRD18XJ272	2.7k 1/8W Chip	1		
R107	RRD18XJ472	RRD18XJ332	3.3k 1/8W Chip	1		
C145	ECCD1H120KC	——	Deletion			
C109	ECUX1H100KC	ECUX1H150KC	15P 50V chip	1		
K2	RYFF799LBSXG	RYFF799LBXGZ	Rear Cabinet Ass'y	1		
K2-3	RJT636Y	——	Deletion			
K2-5	RJR207	——	Deletion			
K2-7	XTN26+8C	——	Deletion			
	——	RMC895Z	Shield Cover	1		
	——	RHR332Z	Spacer, Shield Cover	1		

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

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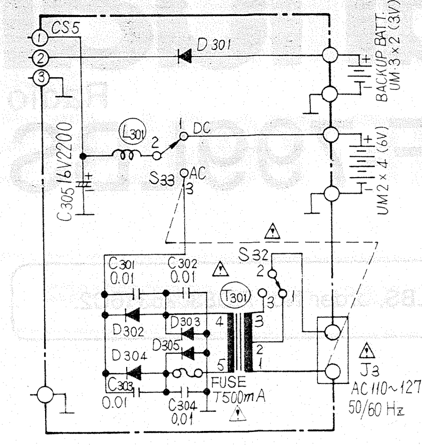
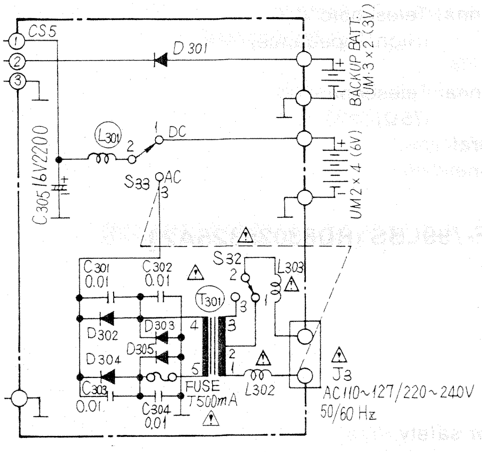
■ SCHEMATIC DIAGRAM


CS5
1
2
3
D301
BACKUP BATT. UM3×2 (3V)
L301
DC
S33
AC
UM2×4 (6V)
C305 16V2200
C301 0.01
C302 0.01
S32
T301
D302
D303
D304
D305
C303 0.01
C304 0.01
FUSE T500mA
J3
AC 110~127/220~240V 50/60 Hz

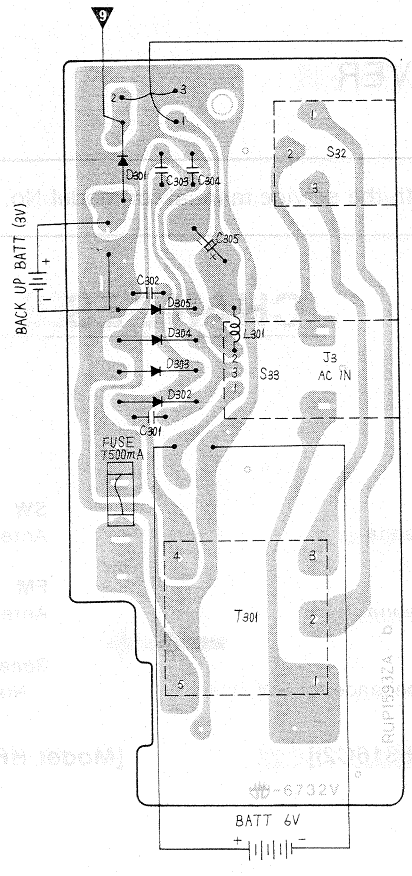
[Model RF-799LBS (RD83025316C2)]


CS5
1
2
3
D301
BACKUP BATT. UM3×2 (3V)
L301
DC
S33
AC
UM2×4 (6V)
C305 16V2200
C301 0.01
C302 0.01
S32
L303
T301
D302
D303
D304
D305
C303 0.01
C304 0.01
FUSE T500mA
L302
J3
AC 110~127/220~240V 50/60 Hz

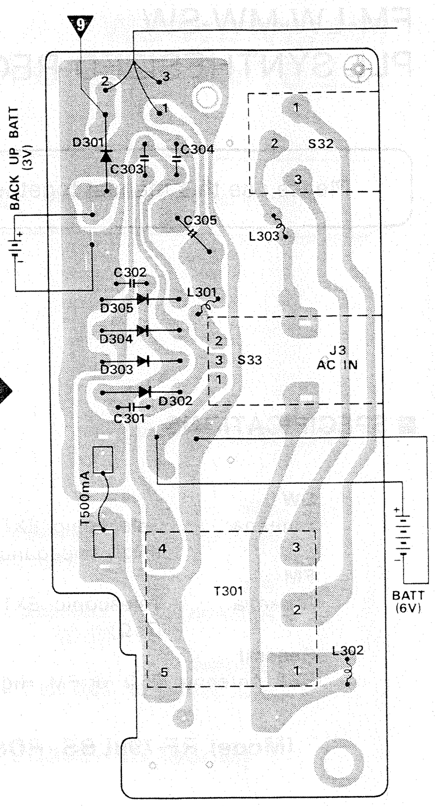
[Model RF-799LBS (RD83025325A2)]

■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

- POWER CIRCUIT BOARD

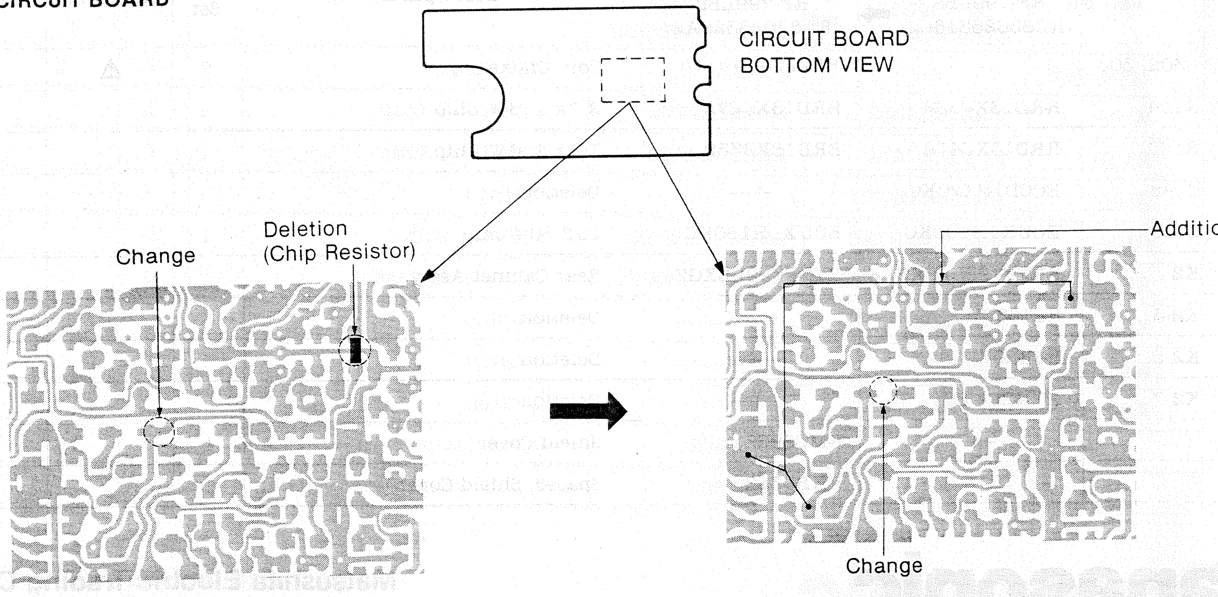

9
BACK UP BATT (3V)
D301
C303
C304
C305
C302
D305
D304
D303
D302
C301
L301
S33
J3
AC IN
S32
FUSE T500mA
T301
RUP1593ZA
6732V
BATT 6V

[Model RF-799LBS (RD83025316C2)]


9
BACK UP BATT (3V)
D301
C303
C304
S32
C305
L303
C302
L301
D305
D304
D303
D302
C301
S33
J3
AC IN
T500mA
T301
BATT (6V)
L302

[Model RF-799LBS (RD83025325A2)]

- RADIO CIRCUIT BOARD


CIRCUIT BOARD BOTTOM VIEW
Change
Deletion (Chip Resistor)
Addition
Change

[Model RF-799LBS (RD83025316C2)]

[Model RF-799LBS (RD83025325A2)]

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